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ADVERTISEMENT.

IN offering the present volumes to the public, my object has been to collect together all the works of Dr. Baillie, some of which have appeared in separate publications, others in the transactions of societies, and a few which were found among his MSS. after his decease.

By far the most valuable of Dr. Baillie's writings is the "Morbid Anatomy of the most important Parts of the Human Body," which had gone through five large editions during his life time, and which is likely to continue as a text book to the student, and a book of reference to practitioners. To it he had made a few additions or alterations; which have been transcribed in this edition from his own corrected copy. In a few instances I have altered terms, and, though sometimes the

author's style may appear objectionable, I have not ventured to make any change except when absolutely necessary for the sake of perspicuity.

In consequence of the rapid advancement of pathological science within the last few years, I have been induced to prefix to the *Morbid Anatomy*, a general account of Diseased Structures, which I hope will assist in acquiring a knowledge of the present state of that branch of Medicine.

As an appropriate accompaniment to Dr. Baillie's works, I have also prefixed an account of his Life, the principal materials of which were obtained from authentic sources, and more especially from a member of his own family.

JAMES WARDROP.

Charles Street, St. James's Square. }
July, 1825. }

THE
LIFE OF DR. BAILLIE.

THERE never was, perhaps, a period in which the study of medicine was more successfully prosecuted, than during the last thirty years in Great Britain. Whilst the rest of Europe was suffering under all the horrors of war and civil discord, a zeal for the cultivation of science was kindled in this country; and in no branch of human knowledge was it more ardent, than in that of medicine. As, during this period, no individual held a more exalted station in the medical profession than Dr. Baillie, it is hoped that a faithful and unadorned account of the most prominent incidents of his life, will be

considered as an appropriate accompaniment to this collection of his works.

It is not less instructive than it is pleasing, to contemplate the life and character of men who have performed the duties of their station with honour and ability. Their example has a powerful influence on the human mind; and biography becomes of great importance to mankind, when it can hold up for imitation the conduct of those individuals who have been distinguished as much for their moral worth as their intellectual acquirements. Indeed, in no department of civilised life can the moral character be more justly appreciated, than in the medical profession. In the exercise of his duties, so much depends on the honour and integrity of the physician, that, when possessed of those great endowments, he is deservedly entitled to public gratitude and respect; while, at the same time, his character cannot be too highly estimated by his professional brethren.

Matthew Baillie was a native of Scotland; he was born on the 27th of October, 1761, at the manse of Shots, in the county of Lanark. His father, the Rev. James Baillie, was soon after

removed from Shots to the church of Bothwell, then to that of Hamilton ; and subsequently was elected Professor of Divinity in the University of Glasgow.

Having passed through the usual course of education at the grammar school of Hamilton, where he acquired a reputation both for industry and talent, young Baillie became a student of the University of Glasgow. He there attended the Greek and Latin classes during the first two seasons ; in the third season he became a diligent mathematician, and attended the Logic class, and that of Moral Philosophy, then taught by the celebrated Dr. Reid. The students with whom he chiefly associated at Glasgow were distinguished for their good conduct and abilities ; and he stored up a source of pleasure, in hearing afterwards of the success of many of them in life, and in believing that every prosperous circumstance which fell to his own lot would be welcome intelligence to them.

Nothing has more essentially contributed to the diffusion of knowledge in Scotland, than the facility afforded to all classes of the community of receiving every branch of education.

Hence have come forward from the more humble walks of life, perhaps the greatest proportion of persons who have been distinguished for their mental endowments. Eminent men have indeed, in all countries and in all ages, sprung forth from hidden and unseen situations, their minds, from the stimulus of necessity, acquiring the strongest impulse, and habits of the greatest perseverance and industry.

Dr. Baillie's mother, Miss Dorothea Hunter, was the sister of William and John Hunter, the celebrated anatomists. From the peculiar advantages held out to him by his uncle, William Hunter, he was induced, though at first rather contrary to his inclination, to choose medicine for his profession; at that time the pulpit or the bar would have pleased him better. It was William Hunter's wish that he should receive his medical education under his own immediate direction, but in order that he might obtain an English degree in medicine, his nephew's limited means made it necessary for him to procure an Oxford "exhibition," which the Professors of the college of Glasgow have in their power to bestow on deserving merit. Whilst this plan

was in contemplation, he had the misfortune to lose his father, and as the family was then left in narrow circumstances, the necessity to secure the exhibition became in consequence particularly urgent. It was, however, at last obtained, and the following letter, which he wrote to his uncle at that momentous period of his life, and which was found amongst William Hunter's MSS., conveys an excellent picture of Baillie's mind whilst about to leave his native country :

“ Dear Sir,

“ I have now got every thing prepared for my journey in the most expeditious manner I could. My friends in the college think that the sooner I set off it is the better ; I therefore intend (since you have not disapproved of it) to set off about the beginning of next week by the way of London. I am told, that upon the whole this is as ready a method of conveyance to Oxford ; but besides this, I would wish to receive your advice as my parent about that plan of study you would wish me to pursue at Oxford. I would wish likewise to talk over with you the

manners of the place, that I may not go unguarded, or unprepared to it. I am told that there is a great deal of dissipation in it, I would therefore wish your warmest advice with regard to my behaviour.

“I have prevailed with my mother and sisters to stay two or three days at Glasgow, about the time of my departure, that they may be diverted from reflecting too much upon it; they are all of them very susceptible of impression. I would wish to make it as light as possible. I hope, that the consideration that I am going to a person who will protect me as long as I deserve it, will render this far easier than otherwise it might have been. My mother gives you thanks for having been so exact in ordering the payment of the annual settlement you have been pleased to fix upon her. Accept of every thing a grateful heart can give. I must confess I am in some measure afraid to appear before you, lest my progress should seem much inferior to what might have been expected, but I trust much in your goodness, that you will make every reasonable allowance for these deficiencies which may

appear. My mother and sisters have their love to you.

“ I remain, affectionately

“ Yours,

“ MATTHEW BAILLIE.

“ Glasgow, March 18th, 1779.

“ *To Dr. Hunter, Windmill Street.*”

Dr. Baillie had reached his eighteenth year when he arrived in London, and presented the following letter of introduction from his mother, by which he first became personally known to William Hunter, amongst whose papers it was also found:—

“ Dear Brother,

“ I beg leave to introduce to you my son, who is now on his way to Oxford, by London.

“ I have furnished him out in the best manner my situation could afford. I now give him over entirely to you. Be a father to him — you are

the only father he has alive. I hope you shall never be ashamed of his conduct, but that he shall obey your directions in every thing.

“ My daughters present their love to you.

“ I am, your affectionate sister,

“ DOROTHY BAILLIE.

“ Glasgow, March 21st, 1779.

“ *Dr. Hunter, Windmill Street.*”

Baillie now commenced a career under the most favourable auspices. William Hunter, who at this time was far advanced in years, was a shrewd observer of mankind, and his long intercourse with the world had furnished him with many recollections and observations. He had at the same time a peculiarly happy talent for relating anecdote, and with such expression of countenance and voice, that it was supposed he might have acquired on the stage the highest rank as a comedian. To hear him tell stories, and indulge those humours by the fireside, which was a common custom when alone with

his nephew, was delightful to the youth, who, on the following morning, had the advantage of receiving instruction from one of the most distinguished philosophers of his age.

At Oxford, Baillie continued to pursue his classical education, but as that university afforded him no means of acquiring a knowledge of medicine, he spent the whole of his time, after the first year, with William Hunter, except during the “terms,” which amounted only to a few weeks annually.

Whilst at Oxford his habits were studious and diligent, and of the services which his tutor, the Rev. Dr. Prosser, now archdeacon of Durham, afforded him, he always spoke with respect and gratitude. He there also, as well as at Glasgow, formed some friendships which were never interrupted throughout life. Amongst these may be mentioned the names of the Hon. Charles Lindsay, Bishop of Kildare, the Hon. Rev. Archibald Cathcart, the Rev. Archibald Alison, since so much distinguished both as a preacher and as an author, the late Rev. Mr. Gregory, and Dr. Robertson Barclay.

The period of human life is too limited to

enable the generality of men long to employ themselves in studies not immediately connected with their particular professions; however important therefore general knowledge may be, the time devoted to acquire it must be circumscribed; and even those who have most diligently and successfully studied medicine, have admitted, that life is too short to allow them to follow up those investigations which otherwise they might have been enabled further to pursue. Few indeed are to be found who have excelled in more than one branch of human knowledge. Impressed with this truth, Baillie, while under the tuition of William Hunter, directed all his zeal to the study of medicine, and soon became an indefatigable and skilful anatomist, attending at the same time the lectures given by some excellent teachers on the other branches of medicine. His companions of these early days have, however, heard him often express his regret that his avocations in Windmill Street were such as to deprive him of the great advantages he might have derived from visiting some other medical schools, more particularly that of Edinburgh, which was then in its highest

repute, and where he might have heard the lectures of the illustrious Cullen.

In no department of life do men rise to eminence who have not gone through a severe course of study and elaborate preparation; for, whatever be the difference in the original capacities of individuals, it is the cultivation of the mind alone which elevates to distinction. No man laboured more in early life than Dr. Baillie in order to acquire what may be said to have been the ground work of his professional fame; and his mind thus received that general tuition which fitted it in an especial manner successfully to prosecute the study of medicine. Men sow the seeds of their future reputation, perhaps, at a much earlier period than is usually supposed, and the latter years of life are occupied merely in digesting and arranging what was in early years impressed. It is, therefore, an erroneous doctrine to inculcate to the student of medicine, that he should trust to experience for the acquirement of useful knowledge. Experience is too apt to be confounded with observation, and in contemplating the life of Dr. Baillie, it is evident that all he did for medical science, was

accomplished before he had reached his fortieth year, and before he could have had that experience which is generally supposed necessary to lead to eminence.

In two years from the commencement of his studies Baillie became a teacher in the Anatomical Theatre. But he had not been thus employed more than twelve months when William Hunter died, bequeathing to him the use of that museum which is now deposited in the university of Glasgow, and forms so noble a monument of its founder; and it may be remarked as a most extraordinary circumstance, that two brothers at the same time, and in the same place, should have collected the two most splendid and most extensive museums now existing; and any person inspecting them can hardly conceive how either of two such vast collections could have been the work of a single individual. Besides the use of the museum, William Hunter left his nephew his Anatomical Theatre and house in Windmill Street, and also a small family estate in Scotland, which he had re-purchased, but which Baillie in the most handsome manner immediately gave up

to his uncle John, considering him as his brother's natural heir. William Hunter also left his nephew about one hundred pounds a year, the remainder of his fortune being entirely devoted to upholding the museum, to erecting an adequate building for its reception at Glasgow, and to an annuity to two surviving sisters. I have heard it said, that, in a conversation a short time previous to his death, his uncle told him "that it was his intention to leave him but little money, as he had derived too much pleasure from making his own fortune to deprive him of doing the same."

In a MS. lecture in which Dr. Baillie alludes to the character of the Hunters, he remarks, "no one ever possessed more enthusiasm for the art, more persevering industry, more acuteness of investigation, more perspicuity of expression, or indeed a greater share of natural eloquence than William Hunter. He excelled very much any lecturer whom I have ever heard, in the clearness of his arrangement, the aptness of his illustrations, and the elegance of his diction. He was perhaps the best teacher of anatomy that ever lived."

Speaking of John Hunter he observes, "The mind of John Hunter was bold and inventive, treading constantly in a path of its own, without regard to the common track which had been followed by others. This was aided by an industry and enthusiasm of which it would be difficult to find any superior example; with such singular endowments for the cultivation of science, his progress was proportionally great. There is no subject which he had considered where he has not added new light, and there are many which he has very much improved." William Hunter was distinguished for his talents, but John was a man of extraordinary genius.*

* Amongst his papers is a curious note to William Hunter, from his brother John, which it may not be out of place to give here, as it illustrates one feature of the character of that extraordinary man.

"Dear Brother,

"The bearer is very desirous of having your opinion. I do not know his case. He has no money, and you don't want any, so that you are well met.

"Ever yours,

"JOHN HUNTER.

"Jermyn Street, Saturday."

The honourable distinction attained by both his uncles, could not fail to be a powerful stimulus to their nephew's industry, while the interesting truths which the study of medicine unfolded, and its useful results to mankind, must have been, to a mind like his, a source of much gratification. In the museums and dissecting-rooms of those great men was laid the foundation of all his future acquirements and reputation.

Dr. Baillie's comprehensive and accurate knowledge of anatomy materially assisted him in acquiring an intimate and correct acquaintance with all the diseases incident to the human frame, and instead of studying those complaints only which were necessary to enable him to practise in such cases as usually come under the care of the physician, he extended his enquiries, and became eminently skilled in general pathology. He embraced every opportunity of examining morbid appearances after death, of which he kept accurate notes, pursuing at this period his pathological researches with great eagerness; and on one occasion his life nearly fell a sacrifice, from

a slight wound on his hand, by a knife with which he was dissecting a putrid body. His industry and application, and the dissections, which he was necessarily compelled to make as a teacher of anatomy, were, indeed, in after life, the sources of that minute pathological knowledge for which he became so eminent.

The history of his uncles, and the important advantages which they had derived from a general and comprehensive knowledge of their profession, were alone sufficient to point out to him the propriety of considering medicine as *one* science; for though custom had rendered it usual for individuals, especially in great cities, to practise only such parts as their acquirements, inclinations, or necessities demanded, yet he considered that a knowledge of the whole science was indispensable to the great mass of medical practitioners, and to every one who expected to treat with success even particular diseases. Except those who practise in cities, the great mass of medical men are required to attend patients with every description of bodily ailment; and in the army and navy, from both of which departments have come forth men of dis-

tinguished practical knowledge, the medical officers are required to have a general medical education, and to understand every part of the healing art. In the other walks of life, the most distinguished are always those who possess the most knowledge. When interrogated regarding any disease, how humiliating must it be for a man to declare his ignorance, because he considered it was not necessary that he should have paid attention to it; or that he knows not a particular anatomical fact, because he was not compelled to learn the structure of that part of the body!

The great value of anatomy to the physician, Dr. Baillie had also learned from his own experience, as well as from his knowledge of the history of almost all those men who had distinguished themselves by their contributions to medical science; and he was particularly anxious that a minute anatomical education should be deemed as indispensably necessary for him who only intended to practise as a physician, as it has always been considered to the surgeon. To use his own language when alluding to this subject, “a disease must always have a relation to a healthy action, or healthy structure of parts,

for it is only a deviation from them, so that a knowledge of disease would appear to rest on a knowledge of the body in its healthy state.

“It is unfortunate that the peculiar mode of deviation is not always discoverable, but it is evident that we cannot on any occasion become well acquainted with the one without having previously known the other. It is in this point of view that Anatomy and Physiology become so very important, as being most likely to afford the means of relieving the body when suffering under disease.” And again he adds, “If anatomy then be of so much use in physic and surgery, it ought to be earnestly cultivated by those who really wish to know their profession, and to become respectable in it. This is not a trifling matter. Justice and humanity require every exertion where the lives of our fellow-creatures are concerned. There are many professions where negligence or inattention may be reckoned a folly; but in medicine it is a crime. There is nothing that renders a person more fit for the discovery of new diseases, than a knowledge of anatomy. Who can be so able as he who is familiar with the natural structure and

diseased appearances in an animal body? There are diseased appearances which are very common in an animal body, and which are of no great consequence. It requires a familiarity with the body to distinguish them from appearances strictly natural, or from diseases that are really serious. This last circumstance is of great importance, when we consider how often we are required to examine bodies after death, for the satisfaction of friends or for judicial enquiries. On our judgement may depend the life of a fellow-creature. What reflection can be more serious to a man of humanity? But independently of these circumstances, there will be many cases of doubt presenting themselves to our minds which we would wish to settle, but shall not be able, unless we are acquainted with natural structure and diseased appearances; yet how is physic to be improved otherwise?" *

It is indeed much to be regretted, that the government of this country, unlike those throughout the rest of civilised Europe, should

* Introductory Lecture.

have withheld their protection from anatomical pursuits ; for, however well-conducted any school may be, anatomical knowledge will never receive that excitement so necessary to the completion of a medical education, until a secure mode of procuring subjects for dissection be afforded it. Till then teachers of anatomy must ever be exposed to insult, by being the means of employing and supporting those who are offending the existing laws of society.

Two years after William Hunter's death, Baillie, associated with Mr. Cruickshank, gave his first course of Anatomical Lectures ; thus undertaking, in the 22d year of his age, the arduous task of supplying the place of one of the most distinguished teachers. But such was his success that the number of students of that school was not diminished by the loss of its illustrious founder.

As a lecturer, he soon attained considerable eminence, being remarkable for the simplicity and perspicuity of his demonstrations, the order and method of his style, and the clearness and distinctness of his delivery. "There was something in his mode of lecturing," to use the

language of one of his most distinguished pupils, “ which, though not eloquent, irresistibly commanded the attention of his hearers : it was that of a person completely master of his subject, and anxious to convey knowledge to others. He was singularly clear in his demonstrations, yet concise and condensed ; he was never at a loss for an appropriate word or phrase ; never made repetitions ; never introduced an observation out of its proper place ; and he had nothing to assist him, except in a few introductory discourses, but the mere heads of his lectures. His manner was not without animation, yet always modest, and most unostentatious ; and the attention of the student was excited, not by brilliancy of composition, but by a remarkable fluency and precision of expression.”

Whilst he was occupied in the investigation of morbid anatomy, and in giving lectures, he did not fail to take every opportunity of preserving, for a private collection, specimens of diseased organs ; and though small, when compared with that of either of the Hunters, yet the museum he thus formed was highly worthy of him, and contains many

excellent and well-chosen specimens illustrating almost every diseased change in the human body. This museum consisted of upwards of a thousand preparations ; and, with the exception of about a hundred, were all made with his own hands. It may here be noticed, that, three years before his death, he presented this collection to the College of Physicians, with 400*l.* for the purpose of keeping it in a fit state of preservation ; and by his will, he also added his Medical Library, containing an excellent selection both of ancient and modern books.

In the year 1787, Dr. Baillie was appointed physician to St. George's Hospital, and two years afterwards, being then 29 years of age, he received his degree at Oxford, and became a fellow of the College of Physicians of London. Up to this period his opportunities of studying the practical part of his profession had been comparatively limited ; but great assiduity and attention, united with his natural sagacity, enabled him to acquire that tact in discriminating diseases in the living body, which formed a striking feature in his future character ; an acquirement which few attain who have not had

constant opportunities of visiting the sick early in life ; for in medicine, as in all other practical professions, the youth obtains with facility certain parts of knowledge, which those more advanced in years find it very difficult, if not impossible, ever to acquire.

The taste which the Hunters created in this country for the study of Morbid Anatomy, marks the period in which they lived as one of the most important and proud eras in our medical history ; and their nephew acquired a taste for this branch of medicine, and cultivated it with great assiduity. Surrounded by their labours, it was not long before he made an admirable use of the valuable stores contained in their museums. A multitude of pathological facts were there illustrated, which he collected and arranged, and which formed the basis of his work on Morbid Anatomy, first published in 1795, a work which, whether we consider the subject, or the manner in which it is treated, has been justly estimated as one of the most practically useful, and most valuable acquisitions to medical science. Till that period all the knowledge on this subject was scattered through the

voluminous writings of Bonetus, Lieutaud, and Morgagni; so that the clear and concise account of the diseased changes of structure of the different organs of the human body, given by Dr. Baillie, formed not only a most excellent elementary work, but was no less useful as a general pathological treatise. This work was soon translated into the French and Italian languages, and also into German, by the celebrated Professor Soemmering, who, when speaking of its merits, observes, that “the strictest attachment to truth characterises every page of Dr. Baillie’s work; accurate and impartial reasoning is every where conspicuous; and there is no part but what displays the share of attention that had been paid in observing those alterations of structure to which the various parts of our body are subject. Attentive and thinking practitioners will here find facts which will furnish them with the true causes of many phenomena they have observed; they will often find explanations they had long wished for; and some will meet with facts, which, instead of agreeing with favourite theories, will serve in the strongest manner to refute them.”

About four years after the appearance of the work on ‘Morbid Anatomy,’ he began to publish the “Engravings” for its elucidation.* Of these it may be truly said, that, for choice of subjects, accuracy of drawing, and beauty of engraving, they have never been excelled; and along with the work itself must remain a lasting memorial of the zeal, the industry, and the talents of their author. The drawings were made by Mr. Clift, whose subsequent valuable services as Conservator of the Museum of the College of Surgeons, prove how well he merited the esteem and regard early felt for him by Dr. Baillie.

To these publications are to be added the papers which appeared in the Transactions of the Royal Society, of the Society for the Improvement of Medical and Surgical Knowledge, and of the College of Physicians, all of which are given in the present collection of his writings, and in all of which are to be found some important pathological facts or some useful

* He bequeathed by a codicil to his will, the copperplates of the Morbid Anatomy to the College of Physicians.

practical observations. He also edited William Hunter's Account of the Gravid Uterus, left in MS., to which were made such anatomical additions as appeared to be required.

Dr. Baillie's writings are all remarkable for the simplicity of their style, and for the truth and conviction they never fail to convey to the mind of the reader, creating no other feeling than that he wrote only for the purpose of conveying information. No one can form a just notion of his power of compressing matter without comparing his Morbid Anatomy with the voluminous works on the same subject which preceded it; or by attempting to add to it from the writings both previous to, and since its publication. This is strikingly illustrated by the little importance that can be attached to the notes of the different translators of that work, and there is scarcely a pathological fact in the stupendous folios of Bonetus, Lieutaud, and Morgagni, which is not to be found in Dr. Baillie's small volume. But this style is only to be obtained by great labour and a perfect knowledge of the subject; and a review of his MSS. exhibits the numerous and tedious

steps by which he was at last enabled to produce what has come before the public. The same clear and distinct mode of expression also appeared in all his correspondence ; and his style of answering letters of consultation, whilst it was brief, was yet copious and well calculated to impress on the mind of the patient his knowledge of the case, and the propriety of the mode of treatment which he suggested.

Soon after the publication of the *Morbid Anatomy*, Dr. Baillie became so deeply engaged in the routine and drudgery of practice, that he no longer devoted any of his time to the prosecution of pathological researches ; and therefore none of the future editions of the work on *Morbid Anatomy*, except the second, to which he added the “Symptoms” of diseases, contains any additions of importance. Up to this period he had been in the habit of keeping an account of dissections of interesting cases, some of which are now given to the public ; but none seem to have been subsequently added to his valuable collection, so that it may be well said of him as Soemmering remarked of William Hunter, that “It must be regretted that

his extensive practice prevented him from gratifying men of science with more written details on pathological subjects.”

In 1799, after having for thirteen years assiduously performed his duties at St. George's Hospital, he resigned that appointment, giving up, at the same period, his Anatomical Lectures ; his whole time being now engaged in the practical part of his profession.

There is no profession, perhaps, in which the progress, even of the best qualified, is so slow as in that of physic : this necessarily arises from success depending entirely on the exertion and assiduity of the individual ; and it is well known that of those medical men who have had the greatest share of public confidence, the most of them have previously been considerably advanced in years. This was the case in a remarkable degree with Dr. Baillie ; for, when the great celebrity of the latter years of his life is considered, it might have been expected that he would have earlier enjoyed no small portion of his fame. It was not, however, till he had nearly reached his fortieth year, that he found himself fairly established in practice ; but it should seem

as if he had only required to be known, for, from that period, he became completely engaged in his profession, and in a very few years rose to that eminence so universally acknowledged.

It is curious to trace the variety of circumstances which have led medical men to celebrity in this metropolis. Dr. Baillie was one of those whose success is greatly to be attributed to professional knowledge, adorned with every private virtue. Minute anatomical study had been too much disregarded by physicians, and conceived necessary for those only who practised surgery. His comprehensive knowledge of anatomy, therefore, could not fail to give him immense superiority over those who were competing with him for practice. Whenever more than ordinary scientific precision was wanted, his opinion was resorted to; and the advantages which his anatomical skill afforded him, soon established his reputation among the better informed in his profession, as well as secured to him the public confidence. However unaccountable it may appear, yet it is not less true, that many of the physicians then in London were of opinion, that his pre-eminence in anatomical knowledge, in-

stead of establishing his fame as a practitioner, would be the means of not only impeding, but absolutely of frustrating his prospects; and he was, in consequence, repeatedly advised to relinquish his anatomical class.

It must, however, be admitted, that Dr. Baillie enjoyed some unusual advantages in addition to his own excellent qualities, at the time when he entered into the practice of medicine. Besides other family connections, his name was early brought before the public as the relative and the pupil of two of the most eminent men of the day: in addition to this, Dr. Pitcairn, with whom he had been acquainted in very early life, at the time when he had arrived at great eminence was obliged, from declining health, to relinquish his extensive practice, and Dr. Baillie was introduced by him to his patients, which introduction was the means of speedily bringing him into notice: and after the death of Dr. Pitcairn, so rapid was the increase of his practice, that he was then induced to abandon his anatomical lectures.*

* When his intention of giving up lecturing was known, his pupils assembled, and voted that a piece of plate should

It was about this period when he moved from Windmill Street to Grosvenor Street, and when his time was sufficiently, but not fully occupied, that those who best knew him consider the happiest portion of his life. But this state, so desirable to his domestic circle, was rapidly changed into one of oppressive and unremitting occupation, every day becoming a continued round of engagements, which he could scarcely overtake. In order, therefore, to estimate what the real character of Dr. Baillie was, we ought to look back to the time when his bodily frame still remained unshaken, and when he was advanced to that period of life when his professional reputation may be said to have reached its zenith. This, indeed, was but short; for the brilliant success of his career was the means of rapidly unhinging his constitution, and of chilling both that elasticity and tranquillity of mind which are only to be found when the body is in health.

Dr. Baillie possessed in an eminent degree a

be presented to him, in token of their gratitude and respect.

facility in distinguishing diseases : — one of the most important qualities in the practice of medicine, and which can only be acquired by an intimate knowledge of the natural structure of the human body. Habits of attentive observation had also enabled him to know, with great accuracy, the precise effects and extent of the powers of medicines ; indeed, there was no class of cases more likely to fall under his observation, than those in which they had been abused ; younger practitioners being apt to carry particular systems of treatment beyond their proper limits. Dr. Baillie's quickness, therefore, in perceiving this abuse, rendered his opinion in many such cases of great value.

In the practical part of medicine, which in its application to individual cases may be said in many respects to be conjectural, the more a man advances in years, the more does he find how limited has been his knowledge, and how much he has still to learn. No one seemed more aware of this than Dr. Baillie ; and I have frequently observed this superior knowledge of his art lead to the remark, that his practice was inert ; for when he perceived certain and irre-

mediable changes in disease, or when they had a fatal character from their commencement, he would merely attempt to palliate, whilst a practitioner not possessing his accurate knowledge, would have made fruitless efforts to cure the disease.

In nothing did he excel more than in the clearness, the conciseness, and the unaffected simplicity in the mode of delivering his opinions. He had the particular merit of leaving no ambiguity in the mind of a patient; and the language he employed was so plain, and so free from scientific jargon, that I have often heard a patient repeat word for word, all he had said on such occasions. He possessed also in an unusual degree, the power of simplifying and of illustrating by analogy what appeared complex and unintelligible, and was thus able to give patients a correct and satisfactory idea of the nature of their complaints. He frequently expressed himself in striking and original language, but always without the slightest affectation. Strong, clear sense, was that for which he was most remarkable. He could admire and praise

ingenuity, but it never for a moment imposed upon him.

He had a most natural, unassuming, but decided and impressive manner, which, in the exercise of his professional duties, was the same to all persons, and on all occasions; his benevolent principles led him to disclaim all distinctions in his mode of addressing the sick. His slender form, together with the great modesty of his deportment, and the simplicity of his manners, often appeared very striking to strangers, who, from his distinguished character, had been led to expect something more imposing in his person and manner. His mind was always quietly but eagerly directed to the investigation of the symptoms of his patient's disease, and he had so distinct and systematic a mode of putting questions, that their answers often presented a connected view of the whole ailment, which could not fail to impress them with his clear and comprehensive understanding. He was modest in his estimation of himself; he would say to his own family, "I know better perhaps than another man, from my knowledge of anatomy, how to discover a disease, but when I

have done so, I don't know better how to cure it." There was one pleasure which he sometimes received from this confidence in his sagacity in detecting diseases, and that was when he could convince any person, who came to him under the impression of having some fatal malady, that there was nothing materially the matter with him; years of peace and comfort that would otherwise have been years of apprehension and misery, he was conscious of having thus bestowed on many.

Dr. Baillie was also remarkable for the consideration he paid to the feelings of his professional brethren, more particularly to the younger branches, and others who could not be supposed to enjoy the full confidence of the public; and no feature of his character elevated him more than this in their estimation, for medical men have been too often censured for attempting to underrate the talents, and expose the errors of their brethren, and thus to create great distress to patients by giving contradictory opinions. Whatever may have been the general feeling of esteem for Dr. Baillie, his memory ought above all to be respected by the members of his pro-

fession. The influence possessed by a man of his moral worth, as well as his professional reputation, tended in no small degree to elevate the character of the profession to which he belonged in public estimation, and to rescue it from the imputation of quackery, which the conduct of others was too much calculated to impress. He formed a just value of public opinion; and to use his own expression, when alluding to it, "If the public opinion is not to be estimated, we must have a poor idea of what is to most men so valuable." Of the public confidence which he himself possessed, he spoke with modest satisfaction, but of the good opinion of medical men, he could not speak but with emotion; and at public meetings, when any particular mark of their regard has been shown to him, this generous feeling would often swell within his bosom, to a distressing degree. I well remember when he was at the head of the table, at a dinner given by the Society for the relief of the widows and orphans of medical men, that he was quite overcome when he endeavoured to point out the propriety of men of his profession who had

been more fortunate, to use his own modest expression, contributing to assist those who had been carried down the stream of adversity.

He was remarkable for his punctuality in every thing connected with his intercourse with society, particularly in answering letters, paying visits, and in keeping professional appointments. He used to say, “ I consider it not only a professional, but a moral duty, to meet punctually my professional brethren of all ranks. My equals have a right to such a mark of my respect, and I would shudder at the apprehension of lessening a junior practitioner in the eyes of his patient, by not keeping an appointment with him.” He managed to keep his appointments very accurately, for if he was by any accident detained too late, he forfeited one appointment to save the rest.

It is natural to suppose that young practitioners must have considered Dr. Baillie’s good opinion as important to their professional progress, and his mode of bestowing his countenance and assistance was very praiseworthy, and marked the great disposition he had, on all occasions, to do what he considered to be just. He

gladly embraced every opportunity of allowing full credit for whatever acquirements and talents they possessed, and thus gave confidence to the opinions of those who were previously disposed to think well of them. When he could afford assistance directly to an individual, he cautiously avoided doing so if it was in any way to the prejudice of another; but opportunities must have frequently occurred of lending his aid. I remember being told by a person whom he had thus assisted on his first entry into life, that some years afterwards, when Dr. Baillie found him fairly established, he said to him, “You must not expect me any more to recommend you, for it now behoves me to advance the interests of those who are younger, and who stand more in need of my support.”

His disposition was naturally very communicative, and he used to narrate in the most open manner, the history of his own life, and describe to the younger members of his profession, the rocks and shoals which he had met with, contrasting these with his long looked for, but ultimate success. Scarcely any medical person commenced practice in London without

being introduced to him ; and such introductions usually led him to make some observations on what his own experience had shown him to be the necessary qualifications to ensure their success, and the probable progress they must expect to make in their professional career. He pointed out the necessity of competency, of integrity, and of industry, and the slow progress of the most eminent men who had gone before them ; and on the other hand, the transitory fame of all those who had ever attempted to gain professional reputation, as if by storm. Such observations, coming from such an authority, were of the greatest use in checking the too warm imagination of the youth, and thus enabled him to see his situation in life, as it really was, and not as perhaps he had allowed his imagination to paint it. Again and again I have heard him remark, that he never knew an instance of a practitioner settling in London who made a large income at first, continuing afterwards to do so. I have been informed by one of the intimate companions of his early days, that he long considered his own success as hopeless, and never contemplated acquiring any thing like

celebrity, or even competency. He used, in pointing out the difficulties in the road to medical fame, which he had often occasion to do, to impress on young men the impropriety of living expensively, and the error of considering equipages, and parade, and entertainments, necessary for their success, candidly illustrating these opinions by his own experience.

Dr. Baillie's physical frame was feeble, compared with his mental powers. He was under the middle stature, and of rather a slender form. But his unassuming exterior seemed only to enable him to make a deeper impression on those around when he entered into conversation. His countenance was marked by a great deal of sagacity and penetration, and when he was excited into earnest conversation, his features became illuminated, and had much vivacity and intelligence.

He shrunk from having any likeness of himself, during his own lifetime, intruded on the public. Having consented to sit for his picture to Hoppner, as a present to his sisters, a circumstance arose from it, which gave him great uneasiness. He was astonished to find that this

picture was put into the hands of an engraver, without his permission. He was very angry at this, having a particular dislike to the idea of seeing his face in the window of a print shop! On further enquiry he found that the engraving was already completed. His feelings of justice would not allow him to make the engraver lose the fruit of his labour entirely, he therefore purchased the copperplate, and permitted only a few copies to be taken from it, which were presented to his friends; and to make sure of obedience to this limitation, those directions were accompanied by a threat, that should they not be literally complied with, a prosecution at law would be the consequence.

His personal habits were simple, and calculated to give little trouble; and it was as easy to please him in those matters that regarded his table, as his toilet. He seemed to have a particular dislike to the affectation and peculiarities of dress displayed by some medical men, as derogatory to the respectability of their profession.

He was in the habit for the many years he was so much employed, of devoting not less than sixteen hours of each day to the drudgery of his

profession; he usually rose at six o'clock in the morning, and occupied himself till half-past eight in answering letters, writing consultations received the day before, and arranging the visits for the day. Until half-past ten o'clock, he saw patients at his own house, after which hour he paid visits till six o'clock. He generally allowed only two hours of relaxation for dinner, spending the remainder of the evening, and often till a late hour at night, in again paying visits. After such a day's labour, it could hardly be expected that his sleep was sound and refreshing.

There is no state so distressing as that of being called upon to perform more duties than the mind is competent to undertake. Hence arise irritability and change of the natural character. When he became harassed with business, an irritation of temper sometimes disturbed him, but which, from the kindness of his heart, was immediately followed by such compunction, as occasioned him far more trouble, than if he had at once complied with an intrusive request. Often has he been known under such circumstances thus to express himself: "I have spoken

roughly to that poor man, I must go and see him, be it ever so late.” “That patient is in better health than I am in myself, but I have been too hard with him, and must make him amends.” “I have been impatient with that poor hypochondriac.” Thus the irritable temper and the kind heart were at constant variance with one another, to the injury of his tranquillity, and the increase of his bodily fatigue. He has frequently come to his own table after a day of hurry and annoyance, and held up his hands to his family circle ready to welcome him home, saying, “Don’t speak to me,” and then by and by, after having drank a glass of wine, he would look round with a smile of affection, saying, “You may speak to me now,” and never was he more agreeable than when one of these dark shadows had passed over him. After he had limited his practice to consultations, he one day said with much satisfaction, “I am glad to find that I can now give any body that speaks to me a civil answer.”

The extent of Dr. Baillie’s practice, and the number of years he was fully occupied in it, enabled him not only to indulge in every worldly

comfort and luxury, but to amass a very considerable fortune. No man had a more just notion of the value of money, estimating it merely in as much as it afforded him the means of procuring what was necessary and suitable for his situation; but he was extremely careless in the management of it, and paid no attention to pecuniary details. With so little love for money, it may appear strange that he should have devoted so much of his time, and have exposed himself to so much mental and bodily fatigue, in order to obtain it. But it seems natural in most men, who arrive at the zenith of professional fame, to cherish the desire of reaping all the advantages which their elevated situation affords them, and thus without considering the evil consequences to their health, and the destruction of their constitution, run headlong into all the mischiefs of a life of constant excitement, and deprive themselves of every domestic enjoyment, and mental recreation. In the various departments of public life, as well as in medicine, there are daily before us painful examples of eminent men sacrificing their dearest interests, in the pursuit

of professional fame, whilst the more reflecting part of that very public for whom they are thus destroying their health and their true happiness, never regard the sacrifices which they thus make.

Whilst Dr. Baillie formed a just value of his talents and rank in his profession, he was at the same time extremely liberal where he suspected the circumstances of individuals required it, and in all deeds of charity he was bountiful. To the honour of the medical profession, it may be truly said that no class of men give up so much of their time and labour in performing charitable actions; how praiseworthy, then, must he be, who as an individual appeared remarkable among that class of the community. His generosity is recorded in many bosoms, and on many occasions was munificently bestowed, unknown even to his own family. He was not only in the constant habit of refusing fees, when he thought they could ill be afforded, but he often gave money, and sometimes in very considerable sums, where he thought it was well bestowed. A young lady who was suffering severely from a pulmonary

complaint, asked his advice, and he recommended her to spend the winter months in a milder part of the country. He found that her circumstances would not admit of her trying this last resource to regain her health, and to enable her to do so, he instantly gave her an adequate sum of money. Being the son of a Scottish clergyman, he embraced every opportunity of showing his esteem for the members of that church, whose slender means he on many occasions assisted, and from whom he made it an invariable rule never to accept any fee. His conduct to medical men, also, testified his generous and humane disposition: to them and to the branches of their families he invariably gave his advice gratuitously.

An instance came to my knowledge, which not only displays Dr. Baillie's wonted generosity, but exhibits a great delicacy in bestowing it. A lady, whose rank in life was far above her pecuniary resources, had an illness, when his attendance became important, and during which he regularly took his usual fee, until it was no longer necessary; he then left in a bag the whole amount of what he had

received, offering to the lady as an apology, that he knew that had he once refused to take his fee during his attendance, she would not have permitted him to continue it.

Another incident which marked this generosity of his disposition, I well recollect, as it happened at the most busy and prosperous period of his life. He was then passing a great part of each week at Windsor, attending on the Princess Amelia, who was on her death-bed, so that the time he had to spend in London was more than completely occupied. A lady who had dropsy, though aware of her hopeless condition, expressed a wish, that if she could but see Dr. Baillie, she would die contented. I communicated to him her wish, and he immediately acquiesced. He interrogated me about her means, which I knew to be very slender; he in consequence objected to taking any fee, and continued punctually to visit her as long as she lived. Numerous indeed are the instances which might be mentioned, where he seemed to be glad to have an opportunity of thus showing, that there was a value in his professional visits beyond a fee, and that there were occasions when his pro-

fessional aid could be generously bestowed on suffering humanity. To the honour of medical men, it may be asserted, that the public of this kingdom expect from them what is required from no other class of the community; and though this general impression of their generosity may, in many instances, be abused, and lead to imposition, still it has been the means of elevating the duties imposed on them, far above those of other professions. I will venture to assert that not one day passes, in which every medical man is not called upon to bestow gratuitously his professional aid on a suffering fellow creature, and certainly this cannot be said of men in any other department of life. It is, however, a feature peculiar to the character of the medical men of this country; for in all others the medical attendants of public charities are paid like the other officers, and these charities are supported by the public on so liberal a scale, as to afford access to every afflicted individual. Though Dr. Baillie was not one of those who complained of the remunerations they generally met with, yet I have heard him jocosely mention, that a shilling carefully packed up had

been given to him more than once in place of a guinea !

Dr. Baillie received all those professional distinctions due to his merits. He was a member of the Royal Societies and Colleges of Physicians of London and Edinburgh, and of many other learned bodies ; he was Physician Extraordinary to the late King, and Physician in ordinary to the Princess Charlotte of Wales.

Among the numerous proofs which may be mentioned of the high opinion and regard which Dr. Baillie's professional brethren entertained for him, is the unexampled number of medical works which were dedicated to him, amounting to more than thirty, and many of them by writers of eminence.

In the year 1810, he was commanded by the late King to attend on his youngest daughter, the Princess Amelia, along with Sir Henry Halford, Sir David Dundas, and Dr. Pope. Though he was very sensible of the honour of receiving such a command, yet he felt that it was adding greatly to the embarrassment occasioned by his very extensive practice ; but whatever might have been the inconvenience of this attendance to himself,

the condescension and kindness of His late Majesty very soon reconciled him to his visits at Windsor. He has sometimes been heard to mention with pleasure the amiable and manly traits of His Majesty's character, and also the acuteness of his mind. He once observed, "If I knew any thing that I wished to conceal, I would rather be cross-questioned regarding it by any barrister in England than by the King, for his questions bear so directly on those points most important for discovery, and are put in such a manner that they cannot be evaded." Amongst some memoranda left behind him is the following anecdote, which cannot be read without interest : — "One day when I waited on the King, with the other medical attendants, in order to give an account of the Princess Amelia, His Majesty said to me, 'Dr. Baillie, I have a favour to ask of you, which I hope you will not refuse me, it is that you will become my Physician Extraordinary.' I bowed and made the best acknowledgements in words that I could. His Majesty added, 'I thought you would not refuse me and therefore I have given directions that your appointment shall be made out.' A few

days afterwards when we again waited on the King, he said to the other medical men in my presence, ‘I have made Dr. Baillie my Physician Extraordinary against his will, but not against his heart.’ ” On one occasion the King was advised to go to Bath, and Dr. Baillie recommended him to consult there a medical gentleman whom he named; the King immediately conjectured the country from whence he came, and after listening to all Dr. Baillie had to say of him, His Majesty jocosely observed, “I suppose, Dr. Baillie, he is not a Scotchman!”

Dr. Baillie was afterwards called to attend His Majesty himself in his last illness, which attendance was protracted during a period of ten years, and his professional duties at Windsor, which he at first found irksome, by subverting all his former habits of business, soon turned out to be a great relaxation.

Whilst he was thus in attendance at Windsor, a circumstance occurred which marked the candour of his character. There was much canvassing for a representative in Parliament for the county of Gloucester, where he had purchased

an estate, and a nobleman zealous in the support of the ministers then in office, applied to him by letter for his vote. He wrote for answer that he was so very much engaged in business as to make it impossible to take a journey to Gloucester to vote for any candidate ; but at the same time, he thought it right to inform His Lordship, that he had always voted for the Whig interest, and should continue to do so.

Such were the prominent features of Dr. Baillie's public life ; the brief narrative of its close now only remains to be added. He continued to be completely engaged in the arduous, and, to his mind, often irksome duties of his profession, with the exception of an annual relaxation of a few months in every autumn. One of the first seasons in which he took this indulgence, he devoted to a visit to "the home of his fathers," after an absence of thirty years. The love of country was a prominent feature in his character ; and though his habits and avocations precluded him from contemplating a permanent residence in Scotland, yet his soul was ever awake to the welfare of his native land. The feelings however which this journey created, proved very different from what he had

allowed his imagination to paint ; and I have heard him express the sorrow he experienced in witnessing the sad changes which, during so long an absence, had taken place in the small circle of his connections, and amongst the companions of his early years ; and it may easily be conceived, that a mind and heart like his could have little satisfaction, in being, as it were, compelled to contrast his own triumphant success with the adversity and misfortunes of many of his schoolfellows. He had however the gratification of meeting some remaining valued friends, of reviewing the haunts of early youth, and of beholding the mountains and streams which had made a strong impression on his youthful imagination.

He always received great pleasure, when any intelligence reached him, reflecting credit on his native country, and it was with a proud feeling that he learnt, in the year of great scarcity and distress, that the people of Hamilton would not accept of the money collected for their relief, without working for it ; and that they had earned it by making a path to an adjoining village.

Though the kirk of Shots, Dr. Baillie's birth-place, is situated in one of the most wild and barren parts of Scotland, the manse of Bothwell and the country adjoining Hamilton, to which his father was removed, are as remarkable for their beauties, and these may be considered as the scene of his first recollections. But the taste which he in early life acquired for rural scenery and pursuits was unfortunately chilled as he advanced in years, the circumstances of his situation not fostering those habits which are the charm of a country life; so that in his later days, when relaxation from professional excitement became so necessary for his health, his annual retirement to the country did not afford him that rest and complete abstraction from the "haunts of men" which those around him would have hailed with delight. It too often happens, that those, who have led a life of constant occupation in one pursuit, at last have no relish for any other avocation, and the more usual recreations and amusements become to them the cause of the most painful ennui. It is to be regretted that Dr. Baillie seemed not aware of this constitution of our nature, or he might perhaps have

avoided the terrible fever of mind which his perpetual professional bustle created, and thus might not only a valuable public life have been spared, but he would not have deprived himself of those domestic and peaceful enjoyments of which his natural disposition was so well calculated to partake.

Dr. Baillie's health had for some years materially suffered from the fatigue of business, and it may justly be said, that he fell a victim to the constant excitement of professional avocations. His physical frame, far from being originally robust, began gradually to fall into a state of exhaustion past relief from repose; and this continuing without intermission, wore out his body more than the tranquillity and annual retirement of a few months in the country were sufficient to restore. A manifest change at last took place in his appearance: already much wasted, he now became emaciated and feeble; and though the faculties of his mind remained perfect, there were times when even these were deprived of their wonted vigour.

In the early part of the summer of 1823, he

had an attack of inflammation of the mucous membrane of the trachea, which though it at first created little disturbance, became in the month of June very troublesome, being attended with some fever and a frequent cough. In this state he quitted London for Tunbridge Wells, and returned in a few weeks, the more teasing symptoms of cough having been relieved by local bleeding and blisters; but in no respect had his general health improved. His feebleness was now so great that even conversation was a considerable effort, and he had completely lost all relish for food. Though aware that his situation was precarious, he seemed to entertain the hope of being able to return to London in the ensuing winter, and resume to a certain extent his professional avocations; for he was persuaded that he had no organic affection, and that by repose, and living in the country, the digestive organs, whose functions were so much deranged, would be restored. Such were the expressions he then used, when adverting to his situation.

With these hopes he went down with his family to his residence in Gloucestershire; but, instead of gaining strength after his arrival

there, he became daily more and more enfeebled ; and after much bodily suffering, but with a mind unshaken, he expired on the 23d of September, 1823. Thus terminated the life of a man, at once an example to the living by his virtues, his inflexible integrity, his great moral worth, his benevolence to his afflicted fellow creatures, and his high intellectual endowments !

Nothing more strongly marked the respect entertained for Dr. Baillie, than the universal expression of sorrow, of all ranks, when the intelligence of his death reached the metropolis. The event was announced in almost every public body to which he belonged, in terms which evinced the deep regret felt for his loss. Several of his medical friends met together for the purpose of raising a subscription to erect a Monument in Westminster Abbey ; the College of Physicians in particular caused a minute to be published expressing their sorrow in the strongest terms ; and I cannot better conclude this brief Memoir than by citing the eloquent panegyric delivered by Sir Humphry Davy, at the first Anniversary meeting of the Royal Society, after Dr. Baillie's decease.

“ It is difficult in speaking of those with whom we have been connected by ties of friendship, whom we have admired and revered, to be strictly impartial; yet I believe that the merits of Dr. Baillie can hardly be estimated too highly, even by those who had the warmest feelings of affection for him.

“ Whether considered as a physician or as a man, his talents and his virtues were alike distinguished. His works show the accuracy and clearness of his judgment, his minuteness of observation, and his acuteness in referring facts to their true causes, amidst the complicated phænomena presented by diseased organs. Whoever heard him give his opinion in the council of the Royal Society, was struck by the clearness and simplicity of his details, and the happy manner in which he caught the relations, and explained the nature of a scientific subject, in which he was interested.

“ Those who have seen him by the bed-side of the sick, well know the kindness of his nature, the deep interest that he took in the sufferings and danger of his patient; and will

above all estimate the nobleness and disinterestedness of his conduct.

“ An honour to his profession in public life, he was most amiable in his intimate social relations and domestic habits. No man was ever freer from any taint of vanity or affectation. He encouraged and admired every kind of talent, and rejoiced in the success of his contemporaries. He maintained amidst courts the simplicity and dignity of his character. His greatest ambition was to be considered as an enlightened and honourable physician. His greatest pleasure appeared to be in promoting the happiness and welfare of others.”

Dr. Baillie was married in the twenty-ninth year of his age, to Sophia, second daughter of the late celebrated Dr. Denman. From this marriage are two surviving children, Elizabeth Margaret, married to Robert Milligan, Esquire, and William Hunter Baillie. The extent of talent united in his family and their connections was remarkable. He was not only the son of an able Professor, and nephew of the Hunters, but his sister, Miss Joanna Baillie, has attained the

most elevated rank in literature. Mrs. Baillie's sister was married to the late Sir Richard Croft, a man whose name is endeared in the recollection of many, as well for his manly and upright heart as for his professional celebrity, — and Mr. Denman who has distinguished himself so much at the bar, was Dr. Baillie's brother-in-law.

Of Dr. Baillie's character in domestic life, it becomes me to say little. A mind so well regulated, and a heart so full of tenderness and benevolence to his suffering fellow-creatures, could not fail to inspire joy and affection in the bosom of his family. The pleasure which the constant opportunities his profession afforded him of doing good, the lustre of his career, together with all the blessings of domestic happiness, shed a pleasing glow over his hours of recreation, and diffused every where around him a contented cheerfulness.

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MISCELLANEOUS PAPERS

AND

DISSECTIONS.

MISCELLANEOUS PAPERS.

SOME OBSERVATIONS ON PARAPLEGIA IN ADULTS.

THE most common form of paralysis in adults is that called Hemiplegia, in which one side of the body loses more or less of its nervous energy. But there is another form of paralysis in adults called Paraplegia, in which the lower half of the body is more or less impaired in its nervous power. This last form of paralytic affection has, as far as I can judge from my own experience, considerably increased in this country within the last fifteen or twenty years, and it is very difficult to assign any satisfactory reason for it.

Paraplegia in Adults has been considered by most medical men, as being produced by some

disease, either in the bones or ligaments of the spine or in the cavity of the spine, most commonly at the loins, independently of any affection of the brain. The reason of this opinion has probably been, that the lower part of the body, from the loins downwards, is affected in this disease with paralysis, and that in children a similar disease is often obviously dependent on a morbid affection of the lumbar vertebræ, or some other portion of the spine. In adults, however, when the spine has not suffered outward violence, paraplegia, I believe, most commonly depends, in a great measure, on a disease affecting the brain itself. This opinion I have entertained for several years, and some other medical men have likewise held the same opinion.*

It is an opinion, however, by no means general; and the chief object which I have in view in writing this paper, is to render it more commonly known, that it may either be established or controverted by the future observations of other practitioners.

* Mr. Copeland has briefly mentioned this cause of paraplegia in an excellent treatise on the Symptoms and Treatment of the Diseased Spine, p. 10. Sir Henry Hallford, Sir James Earle, and some others have also entertained this opinion.

In the paraplegia of adults it rarely happens that any disease can be detected, even by the most careful examination, in any part of the spine. It may be said, however, that in such cases the disease may exist within the cavity of the spine. This may certainly be the case without any external appearance of disease in the spine, and I have no doubt that it has sometimes occurred. The dura mater may be thickened within the cavity of the spine, or a serous fluid may be effused there, or blood may be extravasated there, or a tumour may be formed there, which will press upon a part of the spinal marrow; or a portion of the spinal marrow itself may undergo some morbid change. Each of these causes may occasionally exist, and I have no doubt that all of them have occasionally produced paraplegia, without the smallest external disease in the spine, and without any morbid affection of the brain. I believe, however, that these causes of paraplegia occur much more rarely than has commonly been supposed, and that this disease most frequently depends on some cause of pressure acting upon the brain itself. In such cases the diseased condition of the brain may immediately affect a portion of the spinal marrow, and its nerves, in the same manner as it affects the nerves of a lower limb in hemi-

plegia ; or if there be any effusion of serum between the membranes of the brain, which is a very common occurrence, a portion of the serum may fall into the cavity of the Theca Vertebralis, and press upon the lower part of the spinal marrow.

Paraplegia in adults may take place at an early period of manhood, but it more commonly occurs at the middle and more advanced age ; it also occurs much more frequently in men than in women. On inquiry into the symptoms, some affection of the head will generally be discovered, as either some pain, giddiness, sense of weight, or drowsiness ; and the vision is often more or less impaired. These symptoms exist in very different degrees in different individuals ; but it seldom happens that none of them exist, and that the head is altogether free from some uneasy feeling. Sometimes the sight of one eye is almost entirely lost, and its pupil appears dilated as in gutta serena, and occasionally there is a paralytic dropping of the upper eyelid of one eye. Sometimes the affection of the brain is marked by a defect in the memory, and a want of the ready exercise of all the general powers of the mind. Sometimes one or both of the upper extremities are more or less affected with numb-

ness, and with feebleness in their motions, when no disease whatever can be found in the cervical part of the spine. These circumstances afford strong evidence that the cause of the disease exists, in such cases, within the cavity of the skull, and that it consists in some mode of pressure upon the brain. With respect to the symptoms of paraplegia which have been more commonly taken notice of, they consist in a sense of numbness and impaired motion of the lower limbs. At first there is only the appearance of some stiffness or awkwardness in the motions of the limbs, but in time their want of power of motion and an inability to preserve the due balance of the body very much increase, and the person cannot walk without the assistance of a stick or of some person. As the disease advances, the urine passes off gradually in a more and more feeble stream, and at length it is often passed involuntarily. The bowels in this disease are almost always costive, and at length, from a want of power in the sphincter muscles of the anus, the evacuations frequently pass off unrestrained by the will. Patients with this complaint often live many years, but most commonly the symptoms gradually increase, and at the end of a few years, they die with their

constitutions entirely exhausted. In a few instances recovery takes place.

I have not had much opportunity of becoming acquainted with the morbid appearances in the paraplegia of adults, but I shall relate what was found on a very careful dissection in one of the most strongly marked cases of the disease, which I have ever known.

The bones of the scull, more particularly at the sutures, were more vascular than usual; the dura mater presented nearly its natural appearance, but the vessels of the pia mater were very much loaded with blood, and there were effusions of serum between the different membranes of both hemisphere of the brain. The tunica arachnoides was opaque and much thickened. The substance of the cerebrum was considerably firmer, and that of the cerebellum was considerably softer than is natural. About four ounces of water were found in the lateral ventricles of the brain, and a considerable quantity of water was discharged from within the theca of the spinal marrow.* In this case the diseased appearances of the brain were very strongly

* The account of this examination was communicated to me by Mr. Pennington, of Montague Place, who had attended the patient for many years. About this patient I was occasionally consulted.

marked. In different cases I entertain little doubt that different appearances will be found, for the causes of pressure upon the brain may be very various; but there are few instances of a morbid change in the structure of the brain which are not attended with an effusion of water between its membranes, and also into the lateral ventricles. A portion of the water effused between the membranes of the brain may escape into the cavity of the theca vertebralis, and compress the spinal marrow at its lower extremity.*

I do not know any very successful method of treating this disease; but that which I have found the most successful is chiefly applicable to it, as depending upon pressure on the brain. This consists in taking away blood, by cupping, from the nape of the neck, in the application of leeches to the temples, in applying a blister to the nape of the neck, and in inserting a seton there. The internal remedies which I have used with most advantage were calomel, or the mercurial pill combined with squills, together with purgative medicines. A grain of calomel,

* I think it not improbable that in those cases of Paraplegia in which the brain is found to be diseased, the morbid affection extends to both hemispheres of the brain: but this point can only be ascertained by a great number of dissections.

or five grains of the mercurial pill, with one grain of dried squills, have been taken every night for many weeks. The purgative medicines have consisted chiefly of neutral salts, and sometimes of pills composed of the extract of colocynth, with an addition of jalap.

I have, in a few instances, found considerable advantage from the lower limbs being rubbed with the hand for an hour twice a-day. In one case a good deal of benefit was derived from electric sparks being drawn from the lower limbs. I believe that considerable advantage has been derived in some cases of paraplegia, from tepid bathing, both in fresh and sea water ; but I have not in my own experience found either very useful. In cases of paraplegia, where the cause has evidently been a disease in some of the bones or ligaments of the spine, or in its cavity, independently of a morbid affection of the brain, a considerable part of the above treatment is not applicable. The same observation likewise should be made with respect to those cases of paraplegia which are connected with the influence of lead on the functions of the stomach and the bowels, in which the Bath waters are often eminently useful.

ADDITIONAL OBSERVATIONS ON PARAPLEGIA
IN ADULTS.

IN a former paper I attempted to show that in a large proportion of cases of Paraplegia in Adults, there was more or less of pressure upon the brain. The symptoms denoting this pressure are not very generally known, and therefore I have thought it might not be unacceptable, if I should state the results of my further experience on this subject. This will be done partly from recollection, and partly from notes of cases taken, as they occurred.

In a large proportion of the cases which I have seen, there was pain or some other uneasy sensation in the head. In a few cases there was a defect of memory, more especially of words, and in one case an occasional paralytic pronunciation. In two or three cases there was a want of the ready exercise of the understanding. In a considerable number of cases there was the dropping of one or both upper eyelids, and a gutta serena in one or both eyes. These affections have sometimes been associated together, and have sometimes been distinct.

The dropping of the eyelids will often go away repeatedly and return. The gutta serena will sometimes in a great measure subside. In one case a person affected with paraplegia saw double for more than six weeks. The pupils were more contracted than natural, and the Iris not sufficiently active in its motions. In almost all the cases of paraplegia which I have seen, the upper extremities have been impaired in their muscular power. The grasp of the hands has been more or less feeble, there has been sometimes a sense of numbness in them, and occasionally objects will drop from the hands. In some cases the handwriting becomes irregular and indistinct. In two cases I found the sense of touch considerably impaired, so that shillings and sixpences could not be distinguished from each other. It is remarkable that I heard from two individuals affected with paraplegia, quite unknown to each other, the same illustration that I have now given of the defect which they experienced in the sense of touch. In all these cases, as far as I recollect, there was no apparent disease in the upper part of the spine, and indeed no distinct appearance of disease in the spine at the loins. The morbid appearances in this disease have as yet not been sufficiently investigated by dissection. Besides the account

of the dissection published in my former paper, I have heard from the most undoubted authorities, of one case where tumours were found in the brain ; and of another, where a large quantity of water was found in the ventricles of the brain, together with some in the theca vertebralis. To these I may add a third case, on the best authority, in which many of the arteries of the brain were found ossified, and a large quantity of water effused between the membranes of the brain. These observations may, I hope, be of some use in directing the attention of Medical Practitioners more to the head in this complaint than hitherto, and may perhaps lead to a more successful mode of treating this very formidable disease.*

July, 1822.

* It may be proper to state that cases of Paraplegia in Adults as well as in children sometimes take place from derangement in the digestive organs. (*Ed.*)

THE CASE OF A BOY WHO HAD HYDROCEPHALUS, AND IN WHOM SOME OF THE BONES OF THE CRANIUM, ONCE FIRMLY UNITED, WERE SEPARATED FROM EACH OTHER TO A CONSIDERABLE DISTANCE.

AFTER water has begun to accumulate in the head of a child, before the bones of the cranium are closely united, it is well known that the effusion may ultimately become very large, that the head may be proportionally increased in size, and that life may be continued under such circumstances for many months, or even years. When the bones of the skull have once become closely united, if Hydrocephalus take place, it almost constantly happens, that the bones still remain firmly joined together, that the quantity of water in the ventricles is comparatively very small with what it is in those cases where the bones have never been united, that the head undergoes no increase of size, and that life is very soon destroyed.

A case however has lately occurred to me of a child of seven years of age, who was affected with hydrocephalus, and in whom the bones

of the scull, which had been firmly joined together, were, by the accumulation of the water, separated to a considerable distance from each other. Such an occurrence I am persuaded, is extremely rare: none of my medical friends, with whom I have conversed on the subject, have met with such an instance, and I have not found an example of it in books.

The boy who is the subject of this paper, was brought to my house in May, 1804. The pupils of his eyes were then considerably dilated, his pulse was somewhat irregular, he complained of pain towards the back of his head, and was often in a state of stupor. His head was of the common size, all the bones of the scull were closely united, and his mother told me that they had closed even earlier than usual. I mentioned my fears that water had begun to accumulate in her son's head: I directed that a large blister should be applied to the whole of the upper surface of his scalp, and that Mercury should be taken internally, along with Squills and Digitalis. Mercurial frictions were also employed. In the course of three or four weeks, the patient, to my surprise, gradually recovered; but he very soon fell into a state of disease that a good deal resembled the remittent infantile

fever, which however, I presume, was intimately connected with his late complaint.

The last stage of his disease was tedious, but he also, in a great measure, recovered from it, and went to Margate at the latter end of the summer to recruit his strength. He remained there about five weeks, and during the first part of his stay his strength was considerably improved, but it afterwards declined, and he returned to London in the beginning of October. His health after his return soon got much worse, he became paralytic, first in the right leg, then in the left, and afterwards in both arms. He had, however, but little stupor, his understanding was clear, and although the pupils of his eyes were a good deal dilated, yet his sight was very little impaired. About the end of December the two parietal bones were first discovered to be separated from each other, and this separation gradually increased till his death, when their distance from each other was three quarters of an inch. A short time afterwards, a separation was found at the coronal suture between the frontal and the two parietal bones, which gradually increased to half an inch, before the boy died. During the last week of his life he had daily attacks of convulsions, and his appetite was so much impaired,

that he could hardly be prevailed upon to take any nourishment. At length, after a very tedious and distressing illness, he died on the 17th of March, 1805.

His head was examined in my presence, and nearly a pint of water was found in the ventricles of the brain.

The great peculiarity in the progress of this boy's disease is the separation of some of the bones of the scull from each other, which had once been firmly united, in consequence of the accumulation of water in the ventricles of the brain. It may very naturally be enquired, whether there was any peculiarity in the sutures of this boy's scull, by which some of its bones, once firmly united, had by gradual distension from within, been separated from each other. In examining the edges of the two parietal bones at the sagittal suture, the processes of union appeared to be more simple in their form, and fewer in number, than is usual in children of the same age. The same circumstances were observed in examining the edges of the frontal and parietal bones at the coronal suture. Had the processes at the edges of these bones been more numerous, and more irregular in their form, it is very difficult to conceive how they could have been separated from each other, in

the progress of this disease. If the boy had been a few years older, such a separation most probably would not have taken place; and in an adult, the bones of whose scull were united by the usual strength of sutures, it would have been impossible.

The edges of the frontal and parietal bones were thinner than is usual at the same period of life; but this effect had been probably produced by the gradual pressure of the brain against these bones, in consequence of the accumulation of water in the ventricles. Had the patient lived longer, they would probably have become still thinner, through the continued influence of the same cause keeping up an increased action in the absorbent vessels of these bones.

The history of this case affords no practical instruction in the treatment of a disease, which, except in a very few instances, has hitherto baffled all the efforts of the medical art; but it is in itself both curious and very uncommon.

CASE OF INTERNAL HYDROCEPHALUS ATTENDED
WITH SOME UNCOMMON SYMPTOMS.

A GENTLEMAN, aged fifty-six, was seized with symptoms of compression of the brain, on the 9th of February, 1805, and became completely paralytic on the right side, on the 11th of the same month. By this attack he lost the recollection of the words of his own language, except a very few, which he pronounced with the greatest distinctness, and without exhibiting that thickness in pronunciation, which is so common in paralytic patients. The words "Yes, yes, no, no, Mr. Reed, yesterday," were employed on all occasions, and with a great variety of tone, to express pleasure and displeasure, joy and sorrow ; to explain the circumstances of his disorder, and to give directions about what he wanted. He did not seem to be aware that these words were not the proper ones to express his meaning, for he often betrayed impatience when he was not understood, and was not mortified at so often repeating the same words ; he could pronounce other words distinctly, but he hardly ever did so, except to repeat some words first uttered in his presence. His countenance

expressed a full share of understanding, and he seemed to comprehend whatever was said or done by others in his presence. His eyes appeared in a natural state; the pupils were not dilated, and his sight was perfect. He sometimes expressed a feeling of pain in the upper part of his head, by putting his left hand upon that place. His skin was sometimes a little hot. His pulse was sometimes between ninety and a hundred, often of the natural frequency, but never very slow nor irregular.

During the first four or five months after the attack, nothing remarkable was observed in the paralytic limbs; but about six months before the death of the patient, the right foot was involuntarily contracted inwards, and the right hand was bent upwards and forwards on the fore-arm. The fingers soon afterwards were contracted into the palm of the hand, and the fore-arm was bent on the arm. This state of the upper extremity was sometimes attended with pain, and the degree of contraction varied a little at different times. During the last few weeks of his life, the right arm acquired so much rigidity in this posture, as in some degree to resemble the permanent attitude of a Fakir in Hindostan. Soon afterwards the right foot was contracted inwards, the right leg was bent back

on the thigh, and the right thigh was bent upwards on the trunk of the body. This contraction, however, was not in the same degree as that of the right arm just described. Within a few weeks of this person's death there was also some degree of involuntary contraction of the left leg and thigh, but there was none in the left arm. About two months before he died, the right thigh and leg became much swelled, and there were even appearances which denoted a tendency to mortification ; but these soon vanished, and the swelling gradually, in a great measure, subsided. During this uncommon disease, the bowels were for the most part rather costive, and the urine was generally in natural quantity, and sometimes a little scanty, but never remarkably so. In the course of so long and severe an illness, the patient's temper was sometimes irritable, but often very calm, and he exhibited great kindness of disposition, which made part of his natural character. He died on the 6th of January, 1806, after an illness of eleven months, and for a few days previous to his death, he was almost in a constant state of drowsiness.

At the beginning of the attack the patient lost blood from the arm, was cupped, and had a blister applied to his head. Some purgative medicines

were ordered, and which were continued in a mild form during the greater part of his illness. When languid, he was directed to take some mild tonic, and when his irritation was considerable, that was appeased by an opiate. For five or six weeks he took four grains of the *Pilulæ Hydrargyri* every night, with the view of diminishing, by absorption, the matter which was evidently compressing the brain; but without any advantage. Very little benefit indeed was expected to be obtained by medicine from the first attack of the complaint; but it occasionally relieved some troublesome symptoms. Some of the circumstances of this disease were so singular, that I had great curiosity to examine the brain. It was examined in my presence two days after death.

The membranes of the brain and the cerebral substance were perfectly natural in appearance. The blood vessels were not much loaded with blood, and there was no appearance of blood having been extravasated in any part of the substance of the brain. The lateral ventricles, however, were found to contain rather more than six ounces of water. Besides this, there was no other diseased appearance, except that the left vertebral artery was enlarged in size, and that its coats had become opaque. The result of

this examination very much surprised me. Although symptoms of pressure upon the brain were very strongly marked, yet none of those had occurred during any part of the disease, which usually denote the accumulation of water in the ventricles.

OBSERVATIONS ON A STRONG PULSATION OF THE
AORTA IN THE EPIGASTRIC REGION.

I have frequently been consulted within the last fifteen years, respecting a Pulsation which is distinctly felt in the Epigastric Region. When the patient first discovers this pulsation, he is generally greatly alarmed, and he has seldom found much comfort from the opinion given him by his medical attendant concerning its nature. From a good deal of experience in cases of this kind, I am enabled to state, that the increased pulsation of the aorta in the epigastric region, very rarely depends on any disease of the aorta itself, or of its large branches in that place; and that this occurrence is almost constantly of very little importance. In the course of my experience, I recollect but one instance in which such a pulsation depended on an aneurismal swelling of the artery.

This symptom, or complaint in question, is more apt to take place at the middle period of life than at any other; but I have known one or two instances of it in persons about the age

of thirty. It occurs both in men and women, but more commonly in the former than in the latter. In one individual the pulsation is much more strongly marked than in another; and in the same individual it varies a good deal in its strength at different times. In some instances the pulsation is more strongly felt in the evening than in the forenoon. It is generally most distinctly felt when the patient is in the horizontal posture; and sometimes the pulsation is so strong when the surface of the epigastric region is exposed to view, as to be visible to the eye, even at some distance. In some instances the boundary of the artery, while it pulsates, can be very distinctly felt, and occasionally it may even be traced nearly as low as the umbilicus. I do not recollect that there is any peculiarity in the pulse at the wrist, of persons affected with this complaint. It is commonly neither intermittent, nor remarkable, either for frequency, strength, or weakness. I have had two opportunities of examining the state of the arteries in the epigastric region, after death, in persons who had this pulsation very strongly marked, and who had died from other diseases. The one person died from an ulcer in the stomach; and the other from a typhus fever of long dura-

tion, in whom the stomach was sound. In both cases, the aorta itself, the branches of the coeliac artery, and the superior mesenteric artery, were perfectly free from all appearance of diseased structure. The arterial system, in these two cases, was not more extensively examined; but there was no reason to believe that any part of it was diseased.

In many instances it is perhaps difficult to ascertain the causes of this increased pulsation of the aorta in the epigastric region; but in most cases it will be found to be connected with an imperfect digestion; and an irritable constitution. When it has once taken place, I believe it seldom subsides entirely, although it varies in degree at different times. However, it does not produce much inconvenience, more especially when the mind has ceased being anxious about it; and a person may continue to live with this symptom, or complaint, just as long as if it did not exist. Some years ago I was consulted by an old man concerning a slight paralytic affection, and when the conversation respecting that complaint was finished, he spoke to me about a pulsation in the epigastric region. It was most distinctly to be felt; and he told me, that on account of this pulsation he had about twenty-

five years ago consulted Sir Cæsar Hawkins, Mr. Bromfield, and Dr. Hunter, before the time of his consulting me. Sir Cæsar Hawkins and Mr. Bromfield told him that it was an aneurism of the aorta; and Dr. Hunter said, that he did not know what it was. Dr. Hunter saw enough of peculiarity in this case to make him doubt, but not enough to enable him to decide that there was no disease in the aorta.

This case shows, that a person may live for many years with a strong pulsation of the aorta in the epigastric region; and from the appearance of the patient, his general health seemed to have been very little impaired by it.

It would be a matter of considerable importance, if we could at all times distinguish with certainty the pulsation of the aorta, about which we are now treating, from that pulsation which is occasioned by aneurism of the aorta in the epigastric region. This, however, will, in some instances, be hardly possible, and more especially in the early periods of aneurism. When the boundaries of the artery can be distinctly felt, and when the artery itself can be ascertained to be of the usual size, it is clear that, notwithstanding the force of the pulsation, the

disease is not aneurism. — When a round circumscribed tumor pulsates against the fingers applied to the epigastric region, there can then be little doubt that the disease is aneurism, either of the aorta or of the coeliac artery. When the pulsation has continued for several years without the health being materially impaired, even if the boundaries of the artery should not be distinctly felt, yet there is the strongest reason to believe that the pulsation of the artery does not depend upon an aneurismal swelling in it.

I am not acquainted with any means of curing this symptom or complaint. Whatever improves the digestion, and renders the constitution less irritable, will be of use in mitigating the increased pulsation; and, above all other circumstances, it is useful to remove the patient's anxiety respecting the disease, when it can be fairly done.

I have thought it of some importance to communicate my observations respecting this complaint, as it may tend, in many instances, to relieve the anxiety of the patient. It may likewise, in time, lead to a successful treatment of the disease, with which the increased pulsation

of the aorta in the epigastric region is connected.*

* The publication of this paper has been extremely useful in calling the attention of practitioners to discriminate between the affection of the aorta therein described and aneurism. It is, however, proper to remark, that it has occasionally led to error; and I have known more than one case of strong pulsation in the epigastric region, where Dr. Baillie himself conceived no organic affection to exist, but which opinion was proved to be erroneous after death. In these cases, when there is no organic affection, the increased pulsation will usually be found to be connected with derangement in the functions of the primæ viæ. (*Ed.*)

OF SOME UNCOMMON APPEARANCES OF DISEASE
IN BLOOD VESSELS.

IT is of consequence to remark singular appearances of disease in the body, even if they should not obviously lead to any useful observations in practice ; because they open a more extended view of the operations of the animal economy, point out more clearly the resources of nature, and render the invention of the mind more generally fitted to assist, when her efforts would otherwise be ineffectual. It is in this point of view that I think the following remarks on some uncommon appearances of Disease in Blood Vessels, may not altogether be unworthy of notice. Two of the appearances which I shall describe are certainly very rare, and the other by no means common.

It is known to every person who is acquainted with the animal economy and with pathology, that the blood, under certain circumstances, coagulates in the vessels of the living body. One case in which it coagulates is, when a ligature has been made upon a vessel, and the blood is prevented from flowing through it at that part, as in the artery of an amputated limb. Another

case in which it coagulates is, when a vessel is dilated, at any part, into a sort of bag, so that the blood then moves slowly, and, as it were, out of the ordinary course of the circulation. The coagulum begins to be formed at the greatest distance from the current of blood; or, in other words, close to the sides of the dilated bag at the greatest distance from the cylindrical cavity of the artery. It rarely happens that a coagulum is formed in an aneurismal artery, until it is considerably enlarged beyond its ordinary size, and the blood is a good deal removed from its natural course of circulation. It still more rarely occurs that the coagulum fills up the whole cavity in which it is formed, so as altogether to prevent the circulation through that part of the vessel. Were this last circumstance often to take place, it would frequently become the natural cure of aneurism, and supersede the painful means of a doubtful operation. It sometimes happens, however, that nature deviates from the ordinary course of diseased operation, and forms a coagulum so complete, as entirely to fill up the cavity in which it takes place, without there having been any previous stoppage to the circulation by a vessel being rendered impervious, and where a vessel is not much enlarged beyond its ordinary size. I had an

opportunity of observing this in the carotid artery of a man, who was brought, about two winters ago, to the Theatre, for dissection. The whole of the arterial system in this man had a tendency to aneurism, the natural structure being in many places changed, and the diameter of the arteries being somewhat enlarged. There was, however, no part dilated into a bag or sac, containing a coagulum, except, as I shall immediately explain, in the carotid arteries.

In the right carotid artery, just before it divides into the external and internal carotids, I found an oval uniform swelling, about an inch and a half in length, and the diameter of the artery was scarcely enlarged to more than twice its ordinary size. The swelling was firm, and gave the same resistance to the touch as a healthy absorbent gland; and if it had been felt through a thin layer of muscle, would certainly have been mistaken for a gland of a large size. When I cut through the coat of the artery, I found its cavity completely filled with a firm coagulum of blood, which had not the appearance of blood recently coagulated after death, as in the beginning of the pulmonary artery, but had the appearance of an old aneurismal coagulum.

Every where the coagulum adhered so firmly

to the inside of the vessel, that, in separating it, the inner coat was, in many places, peeled off along with the coagulum. In cutting into its substance, I found it consisted of distinct layers, as in common aneurism. There was no part of it which had the appearance of having been recently formed, and, therefore, there cannot be any doubt of its having existed for a considerable time before the man's death. It is obvious, then, that in this case a coagulum had been formed in the carotid artery, which had undergone the same process as in aneurism, and that the tendency to aneurism had remedied itself. The whole cavity having been filled up with the coagulum, there was no circulation whatever at this part; hence the cause of further dilatation was removed, and there was no chance of the rupture of the vessel; which is the principal danger in this aneurism.

Only a few cases have been related by authors of aneurisms having been cured without a surgical operation; and even some of these have been suspected not to be authentic. Two cases which lately occurred to Mr. Ford, are described in the London Medical Journal, about which there can be no doubt.

Sir E. Home has offered a very ingenious explanation of such cases, founded on observa-

tions made by John Hunter on the state of arteries in mortification, viz. that it is probable the blood coagulates in the artery above the seat of the aneurismal bag, so as to render it there impervious. This explanation, although it sufficiently accounts for the case to which it immediately refers, yet is not applicable to all cases where aneurisms undergo a natural cure. In the one which I have related there was no coagulum of blood formed, except in the dilated part of the artery; no steps whatever towards mortification had taken place, so that the natural cure entirely depended on the coagulum formed where the artery was enlarged. The blood here had coagulated much more readily than the artery had dilated, so that the whole cavity of the artery was filled up before it had enlarged to any considerable size. Wherever there is a disposition in the blood to coagulate greater than for the artery to enlarge, there the coagulum will at length fill up the whole cavity of the dilated part, and produce a natural cure of aneurism. This state of the blood, or rather of its coagulable lymph, may arise from some connection or sympathy it may have with the diseased structure of the artery, but it is perhaps impossible to determine this with certainty.

It may be remarked, that in the left carotid

artery of the same person, immediately before its division into the external and internal carotids, a dilatation and coagulum were formed; but the dilatation had more the shape of a common aneurismal sac, and the coagulum did not entirely fill up the cavity of the vessel. There was, however, only a small canal for the current of blood, and I am inclined to think that the whole cavity would very soon have been filled up, so that on this side also there would have been a natural cure of the aneurism. From the situation of the two carotid arteries, it is not improbable a person might live without circulation through a part of the main trunks of both carotid arteries, so that if it should become absolutely necessary in any surgical operation, they might be taken up by ligature. John Hunter, in his lectures on aneurism, has mentioned nearly the same opinion.*

* This opinion is in some measure confirmed by an experiment made by Valsalva, in which he tied up both carotid arteries of a dog, and the animal lived for two-and-twenty days afterwards, and might have continued to live, but that he was killed for the purposes of dissection. In two other similar experiments, the dog lived a much shorter time; in one instance three days, and in another six. Vid. Valsalv. Opera, curâ Morgagni, epist. xiii. p. 507.

It would require a great many experiments to ascertain the common event of such an operation; but from what has

Of the Obliteration of Blood Vessels.

It is well known, that under certain circumstances both arteries and veins become changed in their structure, losing their cavities, and degenerating into a sort of spungy ligamentous substance.

This happens when it is no longer necessary that the blood should circulate in them, as in certain changes in the circulation of an animal at a particular period of life. When a child is born, it is necessary that the whole blood of the body should be carried through the lungs, in order to undergo a change which is intimately connected with life, and that there should be no other communication between the blood circulating in the pulmonary artery and in the aorta, than through the lungs and the left side of the heart. Hence the ductus arteriosus gradually contracts itself after the birth of the child, till at length it becomes a sort of ligamentous sub-

been said it appears very obvious that it is capable of succeeding, and it could never be proposed except as the only means of saving a patient's life.

Since the publication of the above paper, the carotid artery has been repeatedly and successfully tied. (*Ed.*)

stance*, without any cavity. The time which is occupied by this process is not long, although it varies in different persons, and in some few instances the vessel has been found in the adult state not entirely obliterated. In proportion as the ductus arteriosus contracts itself, the two branches of the pulmonary artery become enlarged, till at length they are able to convey to the lungs the whole of the blood which is thrown out by the right ventricle of the heart, and in this way the full circulation through the lungs is completed. In the same manner the umbilical arteries and vein degenerate into a ligamentous substance when all communication between the child and placenta has ceased, and when the blood is thrown in different channels for the growth of the child. It sometimes happens, however, although I believe it to be extremely rare, that there is a process of obliteration without any of these circumstances, depending upon some disposition in the vessels,

* Although I have mentioned here, and in other parts of this paper, that blood vessels degenerate into a sort of ligamentous substance, the expression is not perfectly accurate. When their cavities are obliterated they a good deal resemble ligament, but they still retain many properties of structure which belonged originally to them, especially their elasticity.

which we cannot explain. Some years ago a woman was brought to Windmill Street for dissection, in whom the vena cava inferior was found changed into a ligamentous substance, from the entrance of the emulgent veins even to the right auricle of the heart. The cavity here was so entirely obliterated, as not only to prevent all circulation of the blood through this part of the vein, but even in a great measure to prevent the admission of air by inflation. In an attempt made by Dr. Hunter to inflate the vein from the lower extremity, this peculiarity was discovered. The blood being prevented from passing through the vena cava inferior, flowed into the lumbar veins, enlarging them gradually as that vein became contracted, till at length they were of sufficient size to receive the whole blood which returns by the vena cava. From the communication between the lumbar veins and the vena azygos, the blood passed into this vein, and was conveyed to the heart. It happened in this particular instance that there was an additional vena azygos, upon the left side of the spine, so that the blood was conveyed more readily to the heart than if there had been only one vena azygos, as in ordinary cases. The enlarged veins were in some places thrown into varices, as must naturally take place

under the circumstances mentioned. What time was consumed in the obliteration of the vena cava inferior, it is impossible to say ; but, if we consider the process as analogous to the obliteration of the ductus arteriosus and the umbilical arteries and vein, it could not be long. We ought not, however, to rest a very strong opinion upon this analogy.*

This case shows, that, on some occasions, a process of obliteration takes place in the blood vessels, independent of the natural circumstances formerly explained. It also shows the very great resources of nature, that she can bear the function of the largest vein in the body to be suspended without endangering the life of the animal ; for it cannot be doubted that the obliteration mentioned had no share in producing the woman's death. The blood still circulated in the common quantity to and from the heart, but at one place it took a circuitous round instead of a direct one. I think the natural resources of the body in this particular to be so great, that I

* We ought not to rest any strong opinion upon this analogy, because it is easy to see a reason why the obliteration of the cavity in the ductus arteriosus and umbilical arteries should be a short process ; but there is not the same reason for its being a short process in the obliteration of the vena cava inferior, which we have just described.

should not hesitate to believe, if the aorta was obliterated in any part of its passage between the origins of the superior and inferior mesenteric arteries, that the circulation could be carried on by the communicating branches of these two vessels, together with the smaller aids of the anastomoses in the lumbar arteries.

It is reasonable to think, that when an obliteration takes place in any artery or vein, there are pretty large collateral vessels; where there are none, or very few collateral branches, the difficulty of the blood's being impelled into other channels, would probably prevent the obliteration from taking place. In the natural obliterations we find, that there are always in the neighbourhood, vessels of considerable size. Thus, near the ductus arteriosus, are the two large branches of the pulmonary artery; near the umbilical arteries, are the large and numerous branches of the internal iliacs; and near the umbilical vein, are the large branches of the vena portarum. In the same manner, in diseased obliteration of vessels, the collateral branches must be sufficiently large to carry off the current of blood.*

* Morgagni mentions an instance of the same sort of obliteration in veins, and considers it as extremely singular.

It may be worth while to mention here that I once found a stricture in the femoral artery of an adult subject, just under the origin of the *arteria cruralis profunda*. There was a contraction of the artery so complete, that at one part the sides were nearly in contact, but, as far as I could judge, without any diseased alteration of structure. This took place where considerable branches are given off, by which the blood could be readily conveyed to the femoral artery, beyond the place of contraction. What could be the cause of this contrac-

“*Iliaca igitur vena dextra æquo erat latior, at sinistra ejusque rami tenues adeo et pallentes ut rem nunquam antea a me visam miratus cavæ imum truncum asseruerim. Quo facto vel magis miratus sum. Nam pro Iliacæ ejus venæ ostio lineam inveni ipsieys coalitum indicantem, qua in lineam inveni ipsius coalitum indicantem, qua in lineam duo aut tria parva erant oscula cum iliaca vena communicantia. Quam eum secundum longitudinem incidissem et præter filamenta polypora quendam fibrarum quasi fasciculum introrsum extantem conspexissem, mox facilè animadvertente venæ parietes ab uno latere intu se coaluisse, sicque eum fasciculum mentiri cujus species manu utraque parietes distrahendo, neque enim perdissi cilis erat sejunctis, prorsus evanescebat.*”—Vid. *Epist.* 56. *Artic.* 10.

I have had an opportunity also of seeing another instance of obliteration in veins, at the *Lyceum Medicum Londinense*, very similar to what I have described.

tion it is not easy to imagine ; it certainly did not arise from any mechanical constriction, and therefore seemed to depend on some action in the coats of the vessel itself.

Let us suppose that an aneurism had been previously formed in the femoral or popliteal artery of this particular limb, what would have been the consequence? would this contraction of the artery near the groin form a natural cure of the aneurism? There is, certainly, a great analogy between this natural process of contraction in the artery, and the operation for the aneurism, as lately performed by John Hunter. This, in the operation for the popliteal aneurism, consists in simply making an incision upon the femoral artery before it passes through the tendon of the triceps muscle, and taking it up by a ligature, which promises to be a great improvement in the art of surgery. There is this difference, however, between them, that when a ligature is made upon an artery, the blood is prevented all at once, from passing through it, and it takes a very considerable time before the collateral branches enlarge, so as to convey the blood in any quantity to the principal artery ; besides, the ligature is made so near the aneurism, that the enlarged collateral

branches principally communicate with others arising beyond it.

In the case we have mentioned, the contraction of the artery was probably a gradual process, the collateral branches enlarging in proportion as the contraction increased, so that the same quantity of blood was always circulating in the limb. But still the impetus of the blood must have been greatly diminished by passing through a number of meandering channels, instead of one straight canal; so that if the progress of an aneurism could not be stopped by it, it would at least advance very slowly; and if an aneurism had been formed near the seat of the contraction, it must have been as effectually cured by it as by an operation.*

Of the Ossification of Blood Vessels.

There is no diseased change of structure more common in the body, than partial ossification of

* There is an instance of this sort of contraction in arteries mentioned by Morgagni.

“Sed illud peculiare quod si eandem faciem (Scil. interiorem aortæ) inspiceres, tunicæ latus arteriæ sinistrum et posteriorem partem facientes ad angulum inter se jungi, non curvæ instar lineæ videbantur.”—Vid. Lib. v. Epist. 65. Artic. 5.

the arterial system at an advanced period of life. The time of life at which this process begins, and its progress, vary very much in different persons. There is also considerable difference in the sort of change. In some there is a conversion of the coats of an artery into a substance, very much resembling common bony matter; in others there is a conversion of them into an earthy matter, little blended with the animal gluten. This sort of change is so common, that when a person dies about the age of sixty years, it is more frequently found to have taken place in a greater or less degree, than that the arterial system possesses its original healthy structure. The venal system, on the contrary, is so rarely liable to ossification, that it may be said to be a disease in it almost entirely unknown. There is one instance, however, in the Windmill Street collection, where a considerable ossification was formed in the coats of the vena cava inferior, near its bifurcation, into the two iliacs.* Why there should be this difference in the coats of arteries and veins, is not easy to explain. There seems to be no reason for it

* This ossification was found in the same vein which had the extraordinary obliteration we have described in the former part of this paper.

a priori. It might, perhaps, be said, that it depends on the vasa vasorum being more numerous on the coats of arteries than of veins ; but it certainly does not depend upon this circumstance. The vasa vasorum are more numerous on the coats of arteries in younger than in older people, yet in the former, ossification scarcely ever takes place. Besides, it is obvious, that a peculiar effect must depend on a peculiar action, and not simply on the number of vessels.* I do not, therefore, pretend to explain why ossification should be so common an occurrence in the coats of arteries, and so rare in those of veins ; but I know it to be a very rare occurrence in the latter, and for this reason I thought it worthy of mentioning, as a singular matter of fact in the history of diseased appearances.†

* Bony matter, whether deposited in the coats of arteries or veins, can only be formed by the vasa vasorum secreting bony matter in the same manner as it is secreted for the growth of bones generally.

† When ossification takes place in the valvula tricuspedes, or mitrales, it may perhaps be considered as an ossification belonging to the venal system ; but even this is very rare.

ON THE WANT OF A PERICARDIUM.

It is of importance to ascertain any deviation from the ordinary structure of animals, because it either assists in explaining some circumstance in the animal economy, or tends to give a more accurate view of nature. This, however, is not equally the case with every deviation; but it is of more consequence to ascertain it in proportion as it may be rare, as doubts may have arisen with regard to it, or as it may be more connected with any great operation of an animal body. In whichever of these lights we consider the singular phenomenon of a want of the Pericardium, it is very worthy of being noted.

This is one of the deviations from the ordinary structure of an animal in which nature has been most sparing; very few anatomists have had an opportunity of observing it, and the description which those few have given has been very imperfect.*

* I have met with the following instances of a want of pericardium which were observed by different anatomists.

“Discipulum item in Romanâ Academiâ mortuum secui (aderat excellens Medicus Alex. Trajanus Petronius, a

The appearance also of an adhesion of the pericardium to the heart might be mistaken for a total want of this membrane, and hence the

civitate Castellana, acris judicii vir) huic misero juveni pericardium deerat, itaque subinde in syncopen incidebat, subinde mortus similis conspiciebatur, quo genere morbi exanimatus est.”—Reald. Columb. Lib. xv. p. 265.

“ Cor pericardio plane denudatum quod et semel Columbo observatum. Dextra auricula circa venæ arteriosæ orificium aneurismatis modo ultra juglandis magnitudinem distenta erat.”—Vid. Barthol. Centur. iv. Histor. 20. p. 266.

“ Mons. Littre a trouvé dans une femme de 54 ans un cœur sans péricarde, et enfermé absolument à nud dans la cavité de la poitrine. Il étoit sec, dur, d’une surface inégale, raboteuse ; il avoit peu de graisse et une graisse peu onctueuse. On avoit assez parce qu’il y avoit d’extraordinaire dans ce cœur à quoi doit servir le péricarde, &c.”—Mémoires de l’Académie Royale, p. 37. 1712.

“ Il naquit à Grenoble un fœtus monstrueux, mort, mais qui sa mere avoit senti remuer peu de tems avant sa naissance,” &c.

“ Celui-la (*scilicet*, le fœtus) portoit son cœur en dehors, pendu à son col comme une médaille, de sorte qu’il pouvait aller et venir sur la poitrine. Ce cœur étoit d’une conformation naturelle sans péricarde, attaché a ses gros vaisseaux qui lui tenoient lieu de cordons, et qui étoient à découvert comme lui. M. de Vaubournois envoya cette relation à M. Parent, bien attestée par des Médecins et des Chirurgiens de Grenoble.”—Id. p. 39.

“ Qu’il (*scilicet*, le cœur) puisse être sans péricarde je l’ai vu dans un chien fort vigoureux ; mais je suis ici une témoin recusable. Mes amis sçavent pourtant que j’ay de la bonne

best modern anatomists have considered that there was not such a *lusus*. Even Haller, who was by no means disposed to be incredulous, has denied its existence. An opinion, taking its origin from the authority of the most eminent anatomists, had at length become general, that the want of a pericardium had never occurred in the human body. It will appear, however, that this opinion has been formed too hastily, and that such a *lusus* does sometimes occur.

On opening the cavity of the chest of a man about forty years of age, in order to explain, at lecture, the situation of the thoracic viscera, I was exceedingly surprised to see the heart lying naked on the left side of the chest, and I could scarcely at first believe what I saw, but the circumstances were too striking to keep me long in doubt. The heart was as bare and distinct

foi par excès, et que je suis sincère dans le choses mesme ou mon intérêt m'obligeroit de dissimuler."—Discours iv. p. 111, 112. Paris, 1685.

“ In fine, I have observed in a new-born female infant the heart without a pericardium, and turned upside down, so that its basis, with all its vessels, had fallen down as low as the navel, and its apex, still on the left side, lay hid between the two lungs.”—Philosoph. Transactions An. 1740—1741. No. 461.

as it commonly appears in opening the cavity of the pericardium.

The Mediastinum consisted, as in common cases, of two laminæ of pleura ; but it was somewhat changed in its direction, being inclined to the right side of the chest, and lying upon the right of the heart. Both laminæ were connected together through the extent of the mediastinum, by the common intervention of cellular membrane, and crossed over the vena cava superior about an inch above its entrance into the auricle. The heart lay loose in the left cavity of the chest, unconnected in any way except by its vessels ; was of a large size, elongated in its shape, and had its apex opposite to the eighth rib. The right auricle was obviously in view in the same manner as when the pericardium has been opened, and the vena cava superior and inferior were clearly observed entering into it. The appendage of the left auricle was as clearly in view ; and when the heart was inverted, so as to have its apex turned upwards, the extent of its cavity was seen, with the two pulmonary veins of the left side entering behind the appendage. The right and left ventricles were distinct, with the coronary vessels running upon them, and the aorta and pulmonary artery were seen clearly emerging from them.

The heart was involved in the reflection of the pleura belonging to the left side of the chest, which became its immediate covering, and on making the slightest incision into the substance of the heart, its muscular structure was laid bare, as in any common heart deprived of its pericardium. There was no connection between the heart and the diaphragm; they were entirely separate, and the diaphragm opposite to the flattened part of the heart was covered only by a reflection of the pleura. It is well known, that, in ordinary cases, a portion of the pericardium adheres firmly to the diaphragm, which forms a medium of connection between it and the heart. In adhesions, too, of the pericardium to the heart, its attachment to the diaphragm is always the same as in the ordinary healthy structure of these parts.

The apex of the heart being lower down than usual, there was a deficiency of the left lung corresponding to this change of situation.

The phrenic nerve of the right side ran between the two laminæ of the mediastinum, near that edge of it which was applied to the right side of the heart. The left phrenic nerve ran between the same two laminæ of the mediastinum, almost immediately under the sternum. This is a great deviation from its natural course,

for it commonly passes on the outside of the pericardium, following the obliquity of the left edge of the heart.

All these circumstances were seen on simply removing the sternum with a small portion of the ribs, and therefore put the want of pericardium in this subject beyond all doubt.

In the adhesion of the pericardium to the heart, the direction of the mediastinum cannot be altered, the heart cannot be seen lying loosely in the cavity of the chest unconnected with the diaphragm, the appearance of its several cavities and vessels cannot be distinct, nor can any of the other circumstances mentioned take place. Did the certainty of this singular *lusus naturæ* require any other evidence than the description now given, the fact could be supported by very powerful testimony, for the case has been seen by many medical gentlemen in this metropolis, who are eminently skilled in anatomy, and by a great number of students, who were very capable of judging.

In this *lusus* we may remark, that the mediastinum passed somewhat to the right, so that the heart was entirely in the left cavity of the chest. On a little reflection, we should suppose that this would happen. Had the mediastinum been joined to the body of the heart, it would have

been disturbed in its function, from being confined by a tight cord to the sternum. To avoid this inconvenience, the mediastinum was situated a little more to the right, and the heart a little more to the left, than common.

The right phrenic nerve passed very naturally between the laminæ of the mediastinum, for this was nearly its usual course; but that of the left phrenic nerve was necessarily much changed. It could not pass over the body of the heart, nor of the lungs, which were each of them, to be in constant motion; it had therefore to seek for some fixed channel, and the only one was in the mediastinum. Accordingly it was found, as described, between the two laminæ of the mediastinum, almost immediately behind the sternum.

It was natural to suppose, as there is a deficiency of the lungs in ordinary cases opposite to the apex of the heart, that when the apex of the heart was altered in its situation, there should be a change in the situation of the deficiency in the lungs corresponding to it.

It may be a question, how far the increased bulk and elongated shape of the heart, in this particular instance, depended on the want of a pericardium? It might be supposed that the heart, being free from the usual restraint, had

grown beyond its common limit. This, I think, however, will appear, after a little reflection, not to have been the case. The heart, under common circumstances, is originally enclosed in a pericardium, which grows along with it, and the increase of growth keeps pace in both. If, then, there should be at any time a disposition to form a large heart, there is also formed a large pericardium to contain it; or if the heart be small, there is a proportionably small pericardium.

If it be still said that the pericardium tends to limit the growth of the heart, a question naturally arises, What checks the growth of the pericardium? Is it a principle within itself? Why should not the heart be possessed of the same principle? I consider, therefore, the increased bulk and elongated shape of the heart, in this particular instance, as an accidental circumstance, and by no means depending on the want of a pericardium.

As the pericardium was wanting in an adult who had arrived at the middle period of life, it is reasonable to think that the use of that membrane is not very essential. One use which has been attributed to the pericardium is, the secretion of a liquor to lubricate the surface of the heart for its easy motion. This sort of reason-

ing appears *à priori* to be ill-founded. It is impossible to see how a bag like the pericardium, or any other bag, should be peculiarly fitted for such a purpose. The surface of the heart itself, and of the lungs, might have had a power of secretion; and accordingly we find in this particular subject a fluid supplied by them for lubricating the heart without a pericardium. This account of the use of the pericardium was very unsatisfactory to Haller, and on the grounds mentioned.

The more striking use of a pericardium is to keep the heart in a steady situation, so as to enable it to carry on its function uniformly. Some are disposed to consider this as its use, from its being a very strong membrane, capable of bearing a good deal of resistance; and from its being firmly attached to the tendinous portion of the diaphragm, which always preserves nearly the same situation. If we reflect, however, a little, we shall perceive, that a heart without a pericardium, is not really left loose in the cavity of the chest, but is confined in a great measure by the parts being exactly adapted to each other, and completely filling up that cavity. The heart may, in this manner, be sufficiently confined to perform its function, although it cannot be so steadily maintained in

the same situation as when enclosed in a pericardium.

Such are the circumstances which present themselves to the mind, as matter of reasoning in the case before us; but I was anxious to learn something of the history of the person during life, because it appeared not unlikely that some light might be thrown on the subject. My enquiries, however, have been without effect. I cannot find that any observation had been made respecting the pulse by the physicians who attended him. It is not fair to conclude from thence, that the action of the heart is exactly the same, whether it be inclosed or not in its proper membrane; but it is surely enough to show that the action is not very much affected by the want of it. The different considerations which have been mentioned above, will serve, I hope, in some measure, to explain this effect, and to point out how the circulation may be carried on, even for a very long period, under these particular circumstances.

THREE CASES OF INFLAMMATION OF THE MUCOUS
MEMBRANE OF THE LARYNX AND TRACHEA,
WHICH QUICKLY TERMINATED IN DEATH.

VERY few cases have occurred of inflammation of the Mucous Membrane of the Larynx and of the Trachea, so violent as to destroy life in a few days. I have only met with two such cases, during a practice of more than twenty years, and this disease has not been observed at all by many physicians of much longer experience. It seems to me, therefore, that it may be useful to give an account of these cases.

One of them occurred in a medical friend whom I had known most intimately for thirty years, for whom I always felt the highest esteem, and whose memory I shall constantly cherish. The other case likewise occurred in a medical friend. The third case I did not see myself, but the particulars of it were stated to me by an authority on which I have the fullest dependence.

CASE I.

D. P. aged sixty, had been for many years subject to attacks of quinsy, which had readily yielded to general bleeding, purging, and abstinence. On the 13th of April, he felt an attack of sore throat, which was so slight, as not to affect his looks, or to interrupt his professional duties. On the evening of the 15th, he was worse, and on the 16th, he was confined to the house. I called again about ten at night, he was then lying upon his left side, in some degree across the bed, and he spoke thickly from the swelling of his throat. His skin was hot, and his pulse frequent, but not hard. He had been copiously bled by his own desire, and the blood was very buffy. He had also taken some opening medicine, and had applied a blister to his throat. The blister, however, had occasioned so much irritation, that it was taken off before it produced its full effect. He did not consider himself in danger, and I thought that the disease was nothing but what he had often experienced, with a little more than its usual severity. This was so much impressed upon my mind, that I did not even examine his throat, nor did he seem to wish it.

During the night the symptoms became more violent, and a considerable number of leeches were, very early in the morning, applied to his throat. About eleven o'clock in the forenoon I called upon him, and found him sitting up; but his countenance was very pale, his pulse feeble and unequal, and his voice almost lost. There was some difficulty of breathing, but this was without any particular noise, or spasmodic character. He had, however, an uneasy feeling in the larynx, and he wrote on a piece of paper, that his complaint was croup. The tongue was very much swelled, and its under surface was exceedingly red. The velum pendulum palati was also red and swelled; from the thickness of the tongue the tonsils could not be distinctly seen. Sir Everard Home now visited the patient, and we agreed, that an instrument should be passed into the velum pendulum palati, to allow of matter being discharged, if any were there. An instrument was passed, but no matter was discharged. The patient thought himself, however, a little relieved by the small quantity of blood which issued from the wound. At this time he was incapable of swallowing any thing. It was agreed that Sir E. Home and myself should return in the evening about ten, and Dr. Wells, who had been

long intimate with the patient, was to be requested to meet us. I called by myself between four and five in the afternoon, and found him in bed. His pulse was then regular, not deficient in strength, and not very frequent. He was breathing with difficulty, and was a little drowsy, but his countenance was expressive of less distress. He thought himself, and I also thought him, somewhat better. About eight o'clock in the evening he suddenly became worse, and in less than half an hour afterwards he died. On the 19th of April, the second day after his death, the body was examined by Mr. Brodie, in the presence of Dr. Wells, Sir Everard Home, and myself. The tongue was considerably swelled, but not in the same degree as during life, and its under surface was of a red colour. The posterior and upper surface of the tongue was also red, but in a less degree. The velum pendulum palati, and the tonsils, were inflamed, but were not much swelled. The tonsils contained no pus. The epiglottis was at least twice as thick as it is in health, and stood more erect than usual. The membrane of the larynx, which lines the inner surface, was much inflamed, and somewhat thickened, and a small quantity of a thick purulent fluid was found in the sacculi laryngis. The mucous membrane of the

trachea was likewise inflamed, but not in the same degree as that of the larynx. The lungs were sound, but did not collapse on removing the sternum and the anterior extremities of the ribs. Some slight marks of disease were found in the coats of the aorta, but these had no connection with the disorder of which the patient died.

CASE II.

J. M. H. aged fifty-nine, was taken ill on the 16th of July. He came to my house on the morning of that day, about ten o'clock, and told me that he felt some uneasiness in the larynx, a little to the left side. His skin, however, was not hot, nor his pulse more frequent than in health. The uvula appeared a little redder and fuller than natural, and the arch of the soft palate was also somewhat redder; but these circumstances were so little marked, that on superficial observation they would hardly have been noticed. The patient, however, was very anxious about himself, because he had laboured under an inflammation of his throat about fifteen years ago, which nearly proved fatal. He was directed to have seven or eight

leeches applied to his throat, and to take an opening medicine. The next morning, between eleven and twelve, I saw the patient at his own house. He was then somewhat worse, but his breathing did not appear to be laborious, and his pulse was very little accelerated. More leeches were directed to be applied to his throat, but he rather preferred to have blood taken from his arm. Twelve ounces of blood were therefore ordered to be taken from his arm, and a blister to be applied to his throat. During this day he was bled, at his own desire, three times, so as to lose altogether between thirty and forty ounces of blood. The blood was buffy the two first times, but the third time it was not. I called upon him between ten and eleven in the evening, and he was then considerably worse. His breathing was beginning to be laborious, and there was a particular noise in it, which could be referred to the larynx. An emetic was prescribed, with the view of forcing up any mucus which might be lodged in the larynx or trachea; some cooling expectorating medicine was directed to be taken every three hours; and the vapour from a decoction of white poppies, mixed with some vinegar and tincture of myrrh, was recommended to be often inhaled.

The next morning, I found him still worse; and I then hinted to him, that I wished to consult with another physician. I met Dr. Reynolds at six that evening; the patient was then much worse than in the morning, his breathing being more laborious, and there being sometimes very considerable threatenings of suffocation. Dr. Reynolds recommended, that he should immediately take forty drops of laudanum, in a mucilaginous draught, to which I readily assented. The patient went that evening into the warm bath, and likewise took, in consequence of his own desire, at two different times, an additional quantity of laudanum; so that the whole quantity taken amounted to ninety drops. At ten o'clock that evening, when we met again, he was considerably easier, and his breathing was improved. At the former consultation, I had proposed that the operation of bronchotomy should be performed, and this was agreed to by Dr. Reynolds, if the opiate should be found of no use. In the night, the patient becoming much worse, Mr. Tegart, who scarcely ever left him either by day or by night, sent for Sir E. Home and Mr. Wilson to perform that operation. Mr. Wilson was out of town, but Sir E. Home came about four in the morning. The patient, however, was beginning

to sink, so that no advantage from an operation was now to be expected. I was called up at five, and found him in a dying state. He expired at six in the morning of the 19th of July.

Early on the 20th the body was examined by Sir E. Home, Mr. Wilson, Mr. Tegart, Mr. Brodie, and myself. The posterior part of the upper surface of the tongue was somewhat red, but the tongue was not increased in thickness. The tonsils, and the velum pendulum palati were slightly inflamed. The epiglottis was much thickened, and stood erect, so as to leave the cavity of the larynx altogether uncovered. The mucous membrane of the larynx was much inflamed and thickened, and there was a little thick purulent fluid in the sacculi laryngis. When the cut edges of the larynx, which had been slit behind, were brought in contact with each other, the cavity of the glottis was found to be almost obliterated, by the thickening of the inner membrane of the larynx at that part. The mucous membrane of the trachea was likewise inflamed, but in a less degree. The lungs did not collapse on opening the chest, but they were sound in their structure.

CASE III.

T., aged forty-two, had been subject to attacks of quinsy. He was seized with pain in his throat on the 9th of April, about six in the morning, and immediately sent for his apothecary, Mr. Pennington. His throat appeared slightly red and tumid, so as to resemble what is often called a relaxed throat. His pulse was small and frequent, but not hard; his countenance was pale and ghastly, and his breathing difficult and spasmodic. The pain in the throat he referred to the larynx, and described it as a grasping feeling. In the progress of the disease he also complained of pain in the upper part of the chest. When Mr. Pennington first saw him, he took twelve ounces of blood from his arm, which was not buffy, and he also applied a large blister to his throat. He recommended him to send immediately for Dr. Pitcairn, who saw him about ten in the morning. He recommended sixteen ounces of blood to be taken from his arm immediately, and twelve leeches to be applied to his throat. He also ordered a saline draught, with a few grains of James's powder to be taken every four hours. The bowels were loose, and therefore purgative medicines were

considered unnecessary. On the patient complaining of pain in the upper part of the chest, a large blister was applied to it. From none of these remedies did he receive benefit, and he died on the 12th of April. His body was not examined; but, in my opinion, no reasonable doubt can be entertained that the disease in this case was of the same nature as that described in the two former cases.

These three cases naturally suggest the following remarks: Each of the individuals had been more or less subject to inflammations of the throat, and therefore that part, together with the parts in the neighbourhood, may be supposed to have been more liable to disease than in most other persons. As these three cases occurred in one season, and near each other, it is probable that the state of the atmosphere was peculiar, so as more readily to excite inflammation of the mucous membrane of the larynx and the trachea, than in an ordinary season. This opinion is, in some measure, confirmed by slighter inflammations of the mucous membrane of the windpipe having been more common than usual, during the same season.

As in two of the cases there was an intercourse between the individuals, it may very naturally be a question how far the disease was

infectious. This, however, does not seem to have been the case, as no other individual was affected among a considerable number, who saw and attended these patients.

This disease had a strong resemblance to croup, but is still to be considered as different from it. There was not the same kind of ringing sound of the voice as in croup, and no layer of coagulable lymph was formed upon the surface of the mucous membrane of the larynx and trachea, as uniformly happens in the latter disease.

The most important consideration, however, is, how is this disease to be treated? It evidently appears from the cases which have been related, that both general and topical bleeding when employed early, and strenuously, was of no real use. Nor was any benefit derived from blisters, or purgative, expectorating, and cooling medicines. What plan of cure, therefore, should be instituted to prevent the fatal effects of this most formidable disease?

As the inflammation in this disease is phlegmonic, it may be advisable, at the very beginning of the attack, to take as much blood from the arm at once as shall produce fainting. It is possible, that benefit may be derived from this measure, although large bleeding in the common

way was of no use, in any of the cases which I have related. Opiates likewise might probably be employed with advantage, to remove the spasm of the glottis, which certainly has some share in producing the difficulty of breathing, more especially when there are occasional feelings of suffocation.

If no substantial advantage is produced by this plan in thirty hours, it might be advisable to perform the operation of bronchotomy at the upper part of the trachea, just under the thyroid gland. This operation would probably enable the patient to breathe till the inflammation in the larynx, more especially at the aperture of the glottis, had time to subside. Whether this operation would be successful, can only be known by experience; but as far as we can judge *à priori*, it has so reasonable a chance of success as to justify a trial in so fatal a disease, and thereby to ascertain, practically, the degree of benefit which may be derived from it.

CASE OF EMPHYSEMA NOT PROCEEDING FROM
LOCAL INJURY.

I had lately an opportunity of observing a very uncommon appearance of disease in the living body, as well as of examining its extent after death.

M. B., aged about ten years, was admitted nearly three months ago, a patient into St. George's Hospital, with anasarca and ascites; but I visited her only two days before her death. When I saw her lying in bed, her appearance differed in nothing from that of a person highly anasarcaous, nor should I have at all suspected that there was any peculiarity in her complaint. On attempting to feel her pulse, however, I was surprised by the crackling of air under my fingers. The skin was considerably elevated, so that the pulse, by that means, was indistinctly felt. I then pressed upon the skin of the back, breast, belly, &c. and there was the same crackling of air. Air was also felt in the cellular membrane of the inside of the thighs. There was at the same time, so considerable a quantity of water accumulated in the cellular membrane of the legs and face, as could readily be distin-

guished by the doughy feeling on pressure. The girl herself lay in a sort of stupid state, expressing, however, a sense of considerable pain, and having a good deal of difficulty in breathing.

The patient died the next day, and I took an early opportunity of examining the full extent of the disease by dissection.

Air was found diffused through the cellular membrane of the trunk, arms, thighs, &c. as formerly related. On making an opening into the cavity of the abdomen, the stomach was found distended, almost as far as it could stretch, with air, and the whole intestinal canal was moderately filled with it. The air, too, had penetrated into some parts of the cellular membrane of the stomach and intestines. The laminae of the peritonæum, composing the mesentery, were separated to some distance from each other by the air which occupied its cellular membrane, and the small vessels running upon the stomach and intestines were universally filled with air. There was about a gallon of water in the cavity of the abdomen.

On opening into the cavity of the chest, a great quantity of air was found in the cellular membrane between the pleura and the pericardium, but none could be discovered in the

cellular membrane which connects together the air cells of the lungs. A considerable quantity of water was found in the cavity of the pericardium, and about two pints in the left side of the thorax.

What is remarkable in this case is, the collection of air without any external injury in the cellular membrane of any part of the body. General emphysema has been observed to take place in two ways; the one by air escaping into the cellular membrane, in consequence of the lungs being wounded by a broken rib; the other way is, when air is generated by a putrefactive process, as occasionally happens in mortifications. Neither of these could have been the cause of emphysema in the case which I have related.

First, it did not arise from any accident, as that of a broken rib wounding the lungs. We are perfectly clear upon this point from the following circumstances, viz. when inquiry was made, the patient could recollect no injury nor violence whatever having been lately done to her chest, and upon examination after death, the ribs were all found to be entire.

Secondly, the emphysema did not arise from putrefaction. There was no sign of putridity whatever in the patient before death, and in our

examination after death, on pressing out the air from different parts, no foetid smell was perceived, even in the smallest degree.

There are two ways in which emphysema not arising from external injury, particularly when preceded by anasarca, may be supposed to be produced; the one is, that the watery fluids, poured into the cells of the cellular membrane, may undergo some chymical change, by which air is separated from them; the other is, that the small blood-vessels distributed on the cells of the cellular membrane, may have some power, under particular circumstances, of secreting air, which is afterwards accumulated in these cells. Which of the two was the cause of emphysema in the present instance I cannot positively determine, although I am inclined to think it was the latter. In cases, however, of general emphysema arising without external injury, I should not hesitate to believe, that the most frequent cause is, the secretion of air by the small blood vessels distributed on the cells of the cellular membrane. That the blood vessels have this power, there can be no doubt. In some animals complete bags are found containing air, being part of their natural structure, as, for instance, in many fishes. The air could, under such circumstances, be separated only by the

small vessels distributed on the bags themselves. Complete bags, containing air, are sometimes found attached to the mesentery of pigs, when it could not enter *ab externo*. It is very probable also, that in cases of tympanites the air is secreted by the small vessels opening on the villi of the mucous membrane of the intestines, and thrown into their cavity.* There is no difficulty in conceiving the possibility of this action of the blood-vessels taking place: it is just as easy to conceive air secreted from the blood by the action of the vessels, as the secretion of the bile, milk, or any other secreted fluid.† How far the air found in the small blood vessels of the stomach and intestines in a dead animal, is to be considered as a decided proof of this opinion, I will not absolutely determine; but most commonly where I have found air in the intestinal canal, I have also found it in its small blood vessels. The time

* John Hunter has taken notice, in his *Essay on Digestion*, of a power in blood vessels to secrete air; and he has illustrated it by some of the examples here given, as well as by others.

† What is the peculiar process of air being separated from the blood in the blood-vessels, I cannot pretend to say; but we are equally unacquainted with the peculiar process which takes place in the separation of any other fluid from it.

taken up by this process of secretion in the present case was short; the emphysema had not been observed by the physician, who had seen the girl two or three days before that on which I was desired to visit her; and Mr. Dampier, the apothecary, told me, that she had swelled suddenly about a day before I saw her.

Cases of emphysema not arising from external injury or putrefaction, are extremely rare. In looking over a number of books, containing accounts of cases and dissections, I have found only one example at all analogous to the case which I have related. It is described in a collection of medical cases published by Dr. Sickel, in 1744.* In this case, emphysema is said to have spread suddenly over the body of a woman, aged above forty, without any external injury whatever, and on the next day to have left her in good health.

The account given of the cause of this complaint is, that, a little before its appearance, the woman had eaten some mustard seed and eruca, along with a sausage, which had expanded and set in motion the air contained in the blood, and other humors, in consequence of which it

* Vid. Sicelii Decad. quartam, p. 487.

was carried into the cellular membrane, and produced emphysema.

I have found, since writing this paper, that Mons. Littri has mentioned, that when there is emphysema from a wound in the lungs, the air taken in by respiration may be forced into small blood vessels, and carried over the whole body in the general circulation, so as to assist in producing universal emphysema. The expressions are as follows in the account given of his opinion: — “ *L’air etranger toujours poussé peut, comme il a été dit, entrer dans les veines et dans les routes de la circulation, et par consequent se repandre par toute l’habitude du corps.*”* In this opinion I believe Mons. Littri is mistaken; and that the air let loose by the wound in the lungs, is sufficient to account for the production of general emphysema, without the aid of any other cause whatever. I suppose the air to be generated in the blood vessels themselves, and to be thrown out in the form of a secreted fluid into the cellular membrane. I have found too, that Dr. Huxham, in a letter published in the Medical Observations, has mentioned as a conjecture, the formation of elastic air in the blood vessels; but he has con-

* Vid. Memoir. Acad. Sciences, 1713.

sidered it as a putrefaction process, and connected with putrid diseases. His words are, “and it is not improbable, that elastic air may be generated even in the arterial and venal system, and be productive of terrible symptoms, vast oppression, anxiety, palpitation, intermitting pulse, deliquium, &c. which are too often observed towards the end of putrid fevers.”*

I consider, however, that the air deposited in the cellular membrane, in the case I have related, had no connection with a putrefactive process, but was formed from the blood itself, by some peculiar arrangement of its parts, and conducted into the cells of the cellular membrane by very small vessels. The opinion, therefore, brought forward in the present paper, is widely different from all these mentioned; I believe it to be new, and I have been chiefly led to it by what Mr. Hunter has said about the formation of air in his *Essay on Digestion*.

Whether the air contained in the cellular membrane and intestinal canal of the girl, whose case I have related, was the same, I cannot possibly determine, because I did not, at the time of examining the body, think of collecting the

* See *Medical Observations*, vol. iii. p. 33. where a case is related by Dr. Huxham of emphysema having arisen during the course of a putrid fever and sore throat.

air ; it is probable, however, that the process of forming air was exactly the same over the whole body, and, therefore, that the air itself, or the result of that process, was likewise the same. I have twice examined air which had been accumulated in the intestinal canal. It was not inflammable, but, on the contrary, extinguished flame ; when made to pass through lime water, it rendered it turbid, and chalk was deposited. The air is, therefore, either entirely of that sort called fixed air, or at least this gas forms a very sensible proportion of the air.* I am not, however, so much accustomed to chymical experiments, as to be satisfied with my own examination.

* Dr. Pearson informed me, that he examined some air from the intestinal canal, and that it consisted of fixed and phlogisticated air, the first in a small, and the last in a much larger proportion.

CASE OF A REMARKABLE HARDNESS OF THE
SKIN OF AN INFANT.

A CHILD, who died a few days after birth, was sent to me to be examined. I was not at all acquainted with any circumstances of its complaint, so that my mind could not be biassed by the influence of any previous conjecture.

What struck me immediately on touching the child was a very considerable Hardness of the Skin, which I had never before observed in any body. The skin, however, was not of equal hardness in every part. The cheeks were a good deal harder than any other part of the body, and I think felt nearly as hard as when the body is frozen. The other parts of the skin generally had that firm feeling which leather that is employed in making strong shoes usually has; but this feeling did not extend to every part of the skin. The skin of the abdomen seemed to have nearly its natural softness and pliability. The skin also of the hands and feet seemed to have less hardness than the skin of most other parts of the body. The skin did not lose any of its hard-

ness by keeping, nor, indeed, by artificial means employed to soften it. I kept a portion of it in water for five days, without its being at all sensibly changed. Whatever, therefore, had been the process of change in the living body, the skin became at length incapable of imbibing moisture, so as to give it its usual pliability. In this respect, this diseased process may be said to resemble the common operation of tanning in dead matter.

The fat under the skin was also somewhat firmer than it commonly is, and was more distinctly gathered into little oval lobules. It appeared to me also that some of the superficial muscles had partaken in some degree of the diseased change. The muscles of the face I thought were evidently harder than they usually are, and the latissimus dorsi on each side was in the same condition, but in a less degree. The muscles of the limbs, however, which lie immediately under the skin, I could perceive to be different from what is natural, and the deepest seated muscles in every part of the body, were as soft and pliable as they are found to be on any occasion.

Having satisfied my curiosity with this examination of the external parts, I next opened the cavity of the abdomen. I there could observe no

diseased alteration of structure in any of the viscera: the colon had its longitudinal bands more contracted than usual, so as to exhibit a distinctly sacculated appearance, and it was empty.

In the thorax the lungs seemed to have a browner colour than common, but had their natural spongy texture, as far as I could judge by the feeling. In the cavity of the pericardium there was about half an ounce of fluid a little tinged with blood. The heart was larger than I had ever seen it in a child of the same age, but it was not at all diseased in its structure. It could only be called a monstrous heart, and the right side of it together with the vena cava superior and inferior was very much filled with blood.

When I took up the upper part of the cranium, so as to look upon the brain, I found it to have its natural appearance, nor was there more water than common in the ventricles; but under the left anterior lobe of the brain there was a coagulum of blood about the size of a pigeon's egg. I could not observe the ruptures of the vessels from whence this blood must have escaped, and besides the coagulum I found no other appearance of disease.

These appearances within different cavities of

the body, I consider to be entirely unconnected with the diseased state of the skin : but in the examination of a body that had died in a disease of which little is known, at least in this country, I thought it right to remark every thing. We often have an opportunity of observing effects, both in the human body and in nature generally taking place together, between which no necessary connection can be traced ; and therefore we ought to watch all appearances in singular cases, till a sufficient number of examples has been collected to enable us to discriminate between what are accidental and what are constant and essential.

AN ACCOUNT OF SEVERAL PERSONS WHO TWICE
HAD THE MEASLES.

ON the 24th of May, 1807, Master Edward ———, aged ten years, was brought home from school, where the measles were prevalent, being affected by a disease which appeared to the apothecary, a very intelligent man, to be the measles. The complaint was mild, but had the usual symptoms, of measles very clearly marked. From him four sisters, and a younger brother, Henry, about eight years old, caught the disease. I saw all of them, but more frequently two of the sisters, who had the complaint most severely. They had the usual symptoms of measles, such as fever, cough, sneezing, red and watery eyes, swelling of the face, an eruption exactly like that of the measles, and also a considerable difficulty of breathing. The eruption went through the usual progress of the eruption in measles, and a cough remained in both of them for a few weeks afterwards. Henry, and one

of the sisters, who was affected three weeks after the others, had the disease mildly.

About the 11th of November, the same boy, Edward, came home from school with a disease which had all the symptoms of measles. Several boys in the school were then affected with that disease. The three younger sisters of the family, and the same boy, Henry, caught the disease from him, and I attended them.

The complaint was so well marked that I could entertain no doubt about its nature. The fever was of the usual duration, the eruption put on the usual appearance, and had the usual progress ; there was cough, sneezing, red and watery eyes.

One of the sisters, who had the disease slightly in May, had it severely in November, and at the close of the disease, some symptoms of pressure on the brain occurred, which, by bleeding copiously with leeches, blistering, and purging, very happily subsided. The eldest sister, who had the disease in May, had it not in November, but she had been affected with it twenty-one years before, when she was an infant, and then caught it from some of her brothers or aunts. Those who were affected with the disease most severely in May were more slightly affected with

it in November, and the younger children were less severely affected with it than the elder ones. They recollected their sensations very distinctly when they were ill in May, and they said that they were exactly similar to what they had felt in November.

From this statement I think no reasonable doubt can be entertained that several members of this family had been twice affected with measles. The measles prevailed in London and its neighbourhood at both times, and the disease in this family at both seasons, had all the usual symptoms of measles very well marked. It is very possible that an eruption may look very like that of measles, and yet may not belong to this disease ; but when it is combined with the other symptoms above related, every unprejudiced person, will, I think, feel a conviction that the disease could be no other than the measles. If this be not admitted, there seems to me to be an end of all criteria by which we may ascertain the identity of diseases.

There have, I believe, been instances of persons being twice affected by all of those diseases which commonly affect persons only once in their lives. These instances, however, are so rare, and appear so opposite to an established

law in the animal economy, that some medical men of distinguished character have doubted whether such instances have really occurred, and whether some mistake may not have been made by those who have recorded them. I can perceive, however, no sufficient ground for this opinion. There are, I believe, few laws of the animal economy to which there are not exceptions, and I can just as readily believe that some constitutions may require to undergo particular diseases twice, in order to be put on the same footing with other constitutions which undergo it only once, as I believe that some constitutions require twice as much Peruvian bark or mercury to be administered than other constitutions, in order to have the same effects produced.

I have been induced to make these remarks, because the symptoms of the measles, during both attacks seem to have been unequivocal, and because several members of the same family were twice affected with measles, which is much more rare than a single or solitary instance of this disease attacking the same individual a second time.

An inference, of some importance, from these cases is, that if any person should be at-

tacked with measles who had been declared to have already laboured under that disease, we ought not for this reason alone to question the accuracy of the medical practitioners who had attended him during the former illness.

ADDITIONAL INSTANCES OF PERSONS WHO TWICE
HAD THE MEASLES.

MISS B ———, aged eleven, was seized on the tenth of March, 1810, with fever which was in the usual time followed by the eruption and the other symptoms of measles. She was attended by Mr. Adams, who had no doubt about the nature of the disease.

On the 27th of June, I was desired to see the same young lady. She had an eruption exactly resembling that of the measles, and all the other symptoms which usually characterize this disease; as cough, sneezing, red and watery eyes, which could not bear the light. The eruption remained the usual time, and subsided in the same manner as the eruption of measles. Dr. Batty and Mr. Wells attended the patient along with myself, and all of us were convinced that the disease was the measles.*

* Dr. Batty who saw the child earlier in the disease than myself, and who had understood that she had lately had the

Miss F. B ———, aged ten, a sister of the former patient was seized on the 12th of March, 1810, with the usual fever accompanying measles. The disease went through the usual course and was marked by all the symptoms of measles. She was also attended by Mr. Adams, who had no doubt of the nature of the disease. On the 9th of July, 1810, she was seized with fever, which was soon followed by the symptoms of measles, viz. cough, sneezing, red and watery eyes, and the usual eruption. The disease went through, in every respect, its usual course. I requested Sir Henry Halford to look at the patient merely as an object of curiosity, and he said that he had never seen a case of measles, more strongly marked. Mr. Wells also attended this patient, and was perfectly convinced that the disease was measles.

Miss Caroline B ———, aged eight years, a sister of the two former patients was seized on the 28th of March, with fever, which was followed by eruption and the other usual symp-

measles, thought at first that it might be an attack of scarlet fever, but when the disease had acquired its full character, he had no doubt whatever of its being measles.

toms of measles. She was attended by Mr. Wells who entertained no doubt as to the nature of the disease. About the 5th of July, when she was on a visit to the city, she was seized with the fever and the other symptoms of measles, and was attended by Mr. Langstaff. He was so certain of the disease being measles, that he could not believe that she had had the measles before. I saw her when the remains of the eruption were still visible on some parts of her body.

During the first attack of measles in this family, a servant maid caught the disease which was marked by the usual symptoms, and passed through the common stages of measles.

Master B——, aged two years, a brother of the former patients, was seized with fever on July, 11th 1810. This was soon followed by the eruption and the other symptoms of measles. He had not had the disease before, but had probably been inflicted by one of his sisters who was suffering from the measles a second time.

I am persuaded that no person can consider these cases impartially, without being convinced that three members of this family had been

affected twice with measles within the space of about four months.

With respect to the first attack of measles, Mr. Adams, who attended the two elder sisters, had no doubt about the disease being measles. Mrs. B——, their mother, a most intelligent woman, entertained also no doubt on this subject, she said that the first disease exactly resembled the second in every particular. The children were of such ages that they could remember their feelings during the course of the first disease, and the interval of time was so short between the two attacks, that their recollection was fresh on this subject. They said in the most decided manner, that their feelings during the time they suffered from both diseases, were exactly similar. A servant maid caught the disease during the first attack of measles, and a young brother caught the disease during the second attack.

These cases afford additional evidence of this most singular fact, that some individuals are capable of being affected by measles twice. As this must depend on some peculiarity in the constitution of the individual, it is natural to think that it may occur in several individuals of the same family, whose constitutions

may be supposed to very much resemble each other.

These cases also shew that the constitution may after a short interval be affected with measles a second time, which is contrary to what analogy would lead us to expect.

SOME OBSERVATIONS RESPECTING THE GREEN
JAUNDICE.

JAUNDICE may be divided into two kinds, viz. the yellow and the green. In the first kind, the skin, and the white of the eyes are more or less tinged of a yellow colour. In the second kind, the skin and the white of the eyes are tinged of a green colour, more or less mixed with yellow, but the green colour is very predominant. In some parts of the skin, the green colour is very deep, so as to have some blackness in its hue, and this circumstance has given rise to the name of black jaundice, by which this disease has been often distinguished.

The Green Jaundice by no means occurs so frequently as the yellow jaundice, but it occurs sufficiently often to have been seen by every practitioner of considerable experience. Little, however, has been said of it in books, and therefore it may not be altogether unimportant to lay before the public some few remarks which I have made on it.

The green jaundice occurs more frequently

at the middle and more advanced periods of life, than at an earlier age; but it occasionally occurs in young persons. It is more frequent in men than in women, and it seems to me to be less connected with intemperance than the yellow jaundice.

In the green jaundice, the liver is often enlarged, hard, and tuberculated throughout its whole substance; but this morbid change of structure is also often confined to a single part of it. Occasionally, but, I believe, rarely, no induration is discoverable in any part of that viscus. Little pain is generally felt in the green jaundice, but there is often some sense of tenderness on pressure in the region of the liver. I think the green jaundice is less frequently attended with dropsy of the abdomen, than the yellow jaundice, when the latter depends on an induration of the liver.

The pulse in the green jaundice is commonly natural both with respect to strength and frequency, unless some circumstance has occurred to irritate the constitution. There is sometimes a distressing itching of the skin in the green jaundice, in the same manner as in the yellow jaundice, and sometimes a strong sensation of heat is felt in the palms of the hands and the soles of the feet. The stools are generally pale

in the green jaundice, but are occasionally turgid with bile. The urine is commonly much coloured with bile, and tinges linen of a deep yellow colour. Sometimes, in slighter forms of the disease, the urine, although deep in its colour, will not impart a yellow tinge to linen. The urine is often not so small in quantity as in the yellow jaundice ; it generally is clear, and rarely deposits a pinky sediment.

In many cases of the green jaundice, the appetite and the digestion are much impaired, and in some cases they are nearly as good as in health.

In the yellow jaundice, provided the substance of the liver be not very much diseased, the patient generally recovers, and the yellow tinge leaves the skin completely. In the green jaundice, the patient very rarely recovers, and the green colour in fatal cases, never leaves the skin during life. There is sometimes a little difference in the deepness of the shade of colour, but it never forsakes the skin altogether.

The progress of the disease in the green jaundice is always slow, but the fatal issue of it is almost always certain. Patients will generally live a year or two with this disease, but in the course of that time the body becomes much emaciated, the powers of the constitution waste, and at length

they sink altogether. In a few instances, patients live for many years with this disease, and even enjoy tolerable health; but the green tinge never leaves their face.

Mercury seems, in general, to have very little beneficial influence on the green jaundice. The kind of induration which commonly attends this disease, is not affected by mercury in the same manner as those indurations of the liver usually are, which sometimes accompany the yellow jaundice. Mercury, however, will sometimes alleviate, for a time, the uncomfortable feelings of the patient, and induce him to think that he is getting better, but it produces no substantial amendment. The daily use of neutral salts, in moderate doses, has appeared to me occasionally to have been of some advantage; but of all the cases of green jaundice, which have fallen under my notice. I recollect two only which have recovered.

In the green jaundice the bile is probably in some respects, chemically different from the bile in the yellow jaundice, and this, perhaps, may constitute a material difference between the two diseases. It would, therefore, be a matter of some importance to have the bile in the green jaundice accurately examined by an able chemist. This examination would not only

make us acquainted with the chemical difference between the two sorts of bile, but might, perhaps, suggest some improvement in the mode of treating the green jaundice. We may be said at present to be in a great measure ignorant of the proper method of treating this formidable disease.

AN ACCOUNT OF A CASE OF DIABETES, WITH AN
EXAMINATION OF THE APPEARANCES AFTER
DEATH.

A man about twenty-four years of age, was admitted a patient under my care into St. George's Hospital, on the 11th of June, 1794, affected with Diabetes.

It is extremely difficult to ascertain the beginning of this disease, because it has almost always made considerable progress before attracting attention. In the present case the person was very much emaciated, and therefore the disease had existed a sufficient length of time to have very powerfully affected the constitution. His general health, before the coming on of this disease, had been good, and he had not been intemperate. He complained of extreme thirst, with a voracious appetite, and passed about ten pints of urine at an average in twenty-four hours. The urine was of a yellowish green colour, with some degree of turbidness; was free from any urinous smell, and had a strong sweet taste. A large portion of saccharine matter, in which there were some imperfect crystals,

was procured from it, in several trials, by evaporation. The patient had a considerable degree of general affection of the system attending this complaint; the skin being dry, with some heat, and the pulse being accelerated beyond the natural standard. It was generally about 90, and not unfrequently it rose above 100. Occasionally he was much flushed in the face, and had a considerable propensity to sweating.

He had a severe purging, which continued with more or less violence between three and four weeks, but this seemed to produce no change whatever on the diabetes. As diarrhœa was epidemic at this time, there was no reason to suppose that there was any connection between the diarrhœa and diabetes. At length, after a trial of a variety of medicines, without any visible advantage, he was seized, on the 7th of November, with a sore throat and violent erysipelas of the face, which carried him off in four days.

The first medicine which was ordered, was decoction of bark, with diluted vitriolic acid, and some alum whey in the evening. This was continued for about ten days, without any apparent advantage.

A trial was next made of a powder, consisting of three parts of the phosphate of soda, and one

of ferrum vitriolatum. The dose of this powder was a scruple, and it was given every four hours. This plan was continued between two and three weeks. Occasionally, for a day or two, the urine was considerably diminished in quantity, but it would return again to its usual standard; it was never altered in its quality of sweetness, as far as I could observe. The variety in the quantity of urine, I had no reason to believe, depended on the medicine above mentioned, because it also varied in the trial of other medicines, some of which were not given with the view of stopping the diabetes. I was led to order the medicine alluded to, not from any conjecture about the nature of the disease, but merely because I had heard that it had once been successfully employed in a similar case.

The patient was next ordered the extract of cicuta, which has been said to have been serviceable in diabetes. He did not take more than a scruple in twenty-four hours, as, even with this small dose, he was much affected with giddiness. The cicuta was continued about three weeks, and during this time there was some variety in the quantity of urine, but upon the whole no real advantage was gained.

Mercury was then ordered, and the strong mercurial ointment was rubbed in every night

in considerable quantity. Two drachms were frequently rubbed in at once, and calomel was also given in pretty large doses by the mouth. The trial of this medicine was continued six weeks. Salivation could never be excited, and the mouth was only made a little tender. No permanent change was produced on the quantity of urine during the use of the mercury, but it was subject to some variety as in the other trials. The patient, however, seemed to recover a little from his emaciation. A large blister was also applied to the loins, and kept open for a short time, but the disease was not affected by it. Shocks of electricity were sent, for several days, through the loins, but without producing any change on the diabetes. The erysipelas, of which the patient died, coming on during the trial of the electricity, it was not continued long enough to form a proper judgment of its effects.

I was led to the trial of mercury and electricity, not from any plausible conjecture about the probability of their success, but merely because they are known to have a powerful influence on the body, and because no medicines, which had commonly been employed in this disease, had been of real advantage.

While the patient had diarrhœa, opiates were

frequently given in small doses, but they produced no change on the diabetes.*

After the patient's death, I took a very early opportunity of examining the body.

Kidneys. — Both kidneys were of the ordinary size and shape. When the proper capsule was removed from each, the veins on the surface were much fuller of blood than usual, and had an arborescent appearance. When the substance of both kidneys was cut into, it was observed to be every where much more crowded with blood-vessels than in a natural state, so as in some parts to approach to the appearance of inflammation. Both kidneys had the same degree of firmness to the touch as when healthy, but I think they were hardly so firm as kidneys usually are, the vessels of which are so much filled with blood. It is difficult, however, to speak very accurately about nice differences in degrees of sensation, unless they can be brought into immediate comparison.

A very small quantity of a whitish fluid, a

* The reader will recollect that this case occurred, and that the present account of it was written, long before the valuable publication of Dr. Rollo on Diabetes appeared, in which a mode of practice has been recommended, that has been attended with much more success than any hitherto adopted.

good deal resembling pus, was squeezed out from one or two of the infundibula in both kidneys, but there was no appearance of ulceration in either. On first tasting the fluid, I thought it had some degree of sweetness, but on repetition I was doubtful of this. The artery and vein passing into the cavity of each kidney presented exactly the natural appearance. After separating, a good deal, the cellular membrane which joins together the blood-vessels, I discovered a lymphatic passing from one of the kidneys. It was of the usual size, had the common valvular appearance, and was empty. There were doubtless several others belonging to both kidneys, but they were so small as not to be distinguishable, a circumstance which is very common in the lymphatics of the kidneys.

The nerves of the kidneys were of the usual size, and the ureters of both were perfectly natural. The venal capsules appeared quite healthy.

There was no diseased appearance in the urinary bladder. Its mucous membrane was more crowded than usual with small blood-vessels; which is not an uncommon occurrence. I could perceive no lymphatic vessels at the neck of the bladder; but these are generally so

minute as to be distinguished with great difficulty.

Stomach and Intestines. — On cutting into the stomach, a quantity of green pulpy matter was found, and there was also the same kind of matter in the duodenum. The matter in the upper part of the jejunum was of the same sort, but much more fluid. The structure of the stomach was quite sound. In some parts of its mucous membrane there were little red spots produced by an accumulation of very fine blood-vessels; such an appearance, however, is extremely common.

There was a greater determination of blood than usual to the whole tract of the small intestines, but their structure was every where sound. The great intestines had no particular mark of having had any previous determination of blood, but they were distended with air.

The mesenteric glands were all healthy, except one or two which contained a good deal of an earthy matter : no lacteal vessels were any where visible.

Liver. — The liver was of a somewhat smaller size than usual, but its structure was perfectly natural. The gall-bladder was flaccid, and contained a small quantity of green bile. The biliary ducts were quite sound. The spleen

was a little softer than usual; but this change is very common on other occasions: its coats at one part were converted into a soft cartilage. The pancreas was quite healthy in its structure.

After having given an account of the appearances on dissection, perhaps it may not be improper to take a short view of the principal theories which have been formed about the cause of diabetes, and see how far these appearances tend to support or invalidate them.

It was the opinion of Dr. Mead, and his authority made it at one time pretty generally received, that diabetes depended on a morbid state of the liver and bile. He was led to this idea from having found, in the livers of persons who had been afflicted with that disease, what he called steatomatous collections. That the liver may be diseased where there is diabetes, will be readily granted, but that a diseased state of the liver is necessary in order to produce this malady, is certainly without foundation. The liver, in the case above related, was perfectly sound, and the bile had no uncommon appearance. In other cases of diabetes, the liver has generally been found in a healthy state. In those cases of the disease, therefore, where the liver has been discovered in a diseased state, it should be considered as an accidental concur-

rence, and not that there had been any necessary connection between the one disease and the other.

It was the opinion of the celebrated Dr. Cullen, and the same idea was afterwards prosecuted with more minuteness by Dr. Dobson*, that diabetes depended on the chyle not being assimilated into the nature of blood, but that circulating in the blood-vessels as chyle, it was strained off by the kidneys in the form of sweet urine.

It is evident that this opinion is founded upon the supposition that chyle contains so large a proportion of saccharine matter, as to be capable of communicating a sweet taste to the urine, when mixed with it. In two dogs which were killed on purpose for making this experiment, I tasted the chyle. In the chyle of the one I was not sensible of any sweetish taste. The chyle of the other seemed to me to be sweetish, but this taste was so very slight, that when a part of it was mixed with an equal proportion of water, the mixture was perfectly insipid; it would, therefore, have been still less capable of communicating a sweet taste

* See Medical Observations, vol. v.

to the same proportion of urine.* The chyle in man cannot be supposed to differ from that in a dog, as digestion is precisely the same process in both species of animals; it is therefore evident, that the sweetness of the urine in diabetic patients cannot arise from a mixture of chyle not assimilated into the nature of blood, and being strained off by the kidneys along with the urine.

As a proof of the truth of his opinion, Dr. Dobson has mentioned, that the serum of the blood, taken from the arm of a diabetic person, had some degree of sweetness to the taste. The serum of blood, however, taken from other diabetic patients, was not sweet, but had the saltish taste of common serum; and whatever may have produced the sweet taste of the serum

* These two dogs were fed with animal food. About the time that this paper was sent to the press, I tasted the chyle of a dog which had been fed on bread, with butter very thinly spread upon it. The chyle seemed to me to be a little sweeter than in one of the former experiments when the dog was fed on meat; but if this chyle had been mixed with an equal proportion of serum, or of urine, it would not have imparted the slightest degree of sweet taste to them.

The force of the present argument, therefore, I do not consider as being in the least affected by the last experiment.

in the case related by Dr. Dobson, it is obvious that it could not arise from the mere mixture of unassimilated chyle.

It appears, further, to be a strong argument against the truth of the opinion entertained by Dr. Dobson, that in cases where the urine in diabetes has been found very sweet, the serum retained its usual saltish taste. If the sweetness of the urine really arose from the mixture of unassimilated chyle strained off along with the superfluous water of the blood by the kidneys, one would naturally be led to believe, that in cases where the urine was very sweet, a sweetish taste should also be perceptible in the serum, from which, according to this theory, it may be said to be derived. In very slight cases it might be allowed, that a sweetish taste may be perceptible in the urine, and not in the serum, on account of its greater mass; but in all cases, this supposition cannot, I think, be conceded.

It has been supposed, by a very ingenious author*, that diabetes is produced in consequence of chyle passing by a retrograde motion of the absorbent vessels from the lacteals into the lymphatics of the kidneys or the bladder. This opinion arises, like the former, on the idea

* See Darwin's *Zoonomia*, from p. 311. to p. 322.

that chyle contains so much saccharine matter as to be capable of communicating a sweet taste to the urine when mixed with it, which has already been shown to be ill founded. If it be said that the chyle of diabetic patients is much sweeter than that of persons in health, it seems to me that there can be no satisfactory evidence of the truth of this opinion, except what arises from an examination of the chyle itself. Besides, no decisive proof has been given of the retrograde action of the absorbent vessels; and this idea is so contrary to the contrivances in their structure and their obvious mode of action, that it should not be admitted but on the most unequivocal evidence.

The œsophagus, the stomach, and the intestinal canal, all of which are capable of an antiperistaltic motion, have been brought into comparison with the absorbent vessels, as being similar to them in structure, and an argument in favour of the retrograde action of the absorbents has been founded on this analogy. These parts bear, however, but a very remote analogy to each other, either in structure or in use, and therefore an argument built upon it seems inconclusive. The veins bear a closer analogy to the absorbents in their structure, and there

are no diseases, as far as I know, which demonstrate a retrograde mode of action in the veins.

It may be considered as a strong argument against a retrograde action of the absorbents, when applied to explain the phænomena of diabetes, that no anastomosis has been demonstrated in the human body between the lacteal vessels and the lymphatics of the kidneys or bladder, and that it is not likely such an anastomosis commonly takes place. What varieties may exist in particular individuals it is impossible to say, but there is sufficient ground for believing that such an anastomosis makes no part of the general structure. The route of the blood-vessels and lymphatics is very much the same in most of the internal parts of the body, and no anastomosis takes place between the blood-vessels of the kidneys or bladder and the blood-vessels of the small intestines. From analogy, therefore, we should be led to believe that there was no anastomosis between the lacteals and the lymphatics of these parts. If such an anastomosis really took place, and if the opinion about the route of the chyle was well founded, one would expect the anastomosis to be particularly observable in a person who had

been long affected with diabetes. The lacteals and the lymphatics of the urinary organs would probably be more conspicuous than in common cases, and therefore their junctions with each other be more readily detected. In the case of the diabetic patient, of which I have given an account, the lacteals were so small as not to be visible: one lymphatic could only be discovered belonging to one of the kidneys, and the lymphatics at the neck of the bladder could not be observed.

Neither is there any reason to believe that there must be a communication between the lacteals and the lymphatics of the bladder or kidneys, accompanied with a retrograde action of their coats, because urine is so soon voided after a considerable quantity of an aqueous fluid has been drank. The absorbent vessels of the stomach and intestines can convey their contents at a very quick rate to the thoracic duct. I recollect to have seen some lacteal vessels empty themselves almost instantaneously when looking at the mesentery of a dog, which had been killed a few hours after taking food; and some experiments, lately made, on the stomachs of living animals, show that watery fluids can be taken up by the absorbents of the stomach in a

very short time, and carried into the thoracic duct.*

Were the rate of absorption from the stomach and intestines even much less than it is, I should be more apt to believe that the quick evacuation of urine, after a person has drunk a considerable quantity of aqueous fluids, was owing to a sympathy between this state of the stomach and the kidneys, than to a retrograde action of the absorbent vessels. There is a general communication of strength to the system when the stomach has received plenty of food after much fasting, long before the food can have been converted into chyle, and carried into the general circulation. This must depend on a sympathy between the stomach, when it has recently received food, and the general system. In the same manner we may suppose, that when a considerable quantity of aqueous fluids has been drunk, the kidneys sympathize with the stomach, and are excited to a more vigorous secretion.

* These experiments were made upon a goat and a dog, by Mr. Carlisle, one of the surgeons of the Westminster Hospital. Above a pint of water was taken up from the stomach in less than twenty minutes, and the absorbents at the small curvature of the stomach were observed to be turgid with a transparent fluid like water, and were passing in the direction of the diaphragm towards the thoracic duct.

There appears to me, however, to be no need for this supposition, as the state of absorption is so great that water may get from the stomach into the circulation in a few minutes.*

It has been supposed by others, that diabetes depends on the tubuli uriniferi of the kidneys being relaxed or enlarged, and that the chyle escapes with the urine, giving it the particular properties which it has in this disease.

* I cannot avoid thinking, that the quick evacuation of urine, after watery fluids have been drunk, has been in some degree misunderstood. It is a certain time, not very inconsiderable, after the first quantity of aqueous fluids has been drunk, before urine is made ; but more aqueous fluid being drunk with frequent repetition, the blood soon receives a superabundant quantity of water, and this is thrown out by the urinary passages at very short intervals. What has been last drunk is not to be supposed to be evacuated, but a certain quantity of water is separated by the kidneys from the general store of water which had been accumulated in the blood-vessels. Although, therefore, the evacuation of water by the urinary passages takes place soon after a quantity of aqueous fluid has been drunk, yet it does not take place in so short a time as has commonly been imagined.

I cannot explain the experiment mentioned by Darwin, in which after nitre had been taken into the stomach it was discoverable in the urine, but not in the serum of the blood. I am persuaded, however, it will hereafter be explained without having recourse to the supposition of there being a communication between the absorbents of the stomach and those of the urinary organs.

The mixture of chyle with the urine, unless much sweeter than common chyle, would not, as I have oftener than once observed, form the sweet urine of diabetes, and therefore this morbid change must depend on some other cause than the mere mixture of the chyle with the urine.

Tubuli uriniferi, so enlarged as readily to allow the chyle to pass, could hardly fail of likewise admitting the red globules of the blood. The urine in diabetes, however, shows no mixture of the red globules, but is of a colour somewhat like whey.

The mammillary substances of both the kidneys, in the case described, had the natural firmness; and the tubuli, which in most kidneys are sufficiently visible, did not appear in the smallest degree enlarged.

When so many men of ingenuity have failed in their attempts to explain the cause of diabetes, I will not venture to bring forward any theory of my own. It would probably be only adding to the mass of conjectures with which medical science has been already too much loaded. I should wish, however, to recommend it to the future observation of others, to determine how far the appearance of the kid-

neys, which has been described in a former part of this paper, may be constant in diabetic patients, and therefore whether diabetes may not probably depend, in an important degree, although perhaps not entirely, on a morbid action of the kidneys themselves.

AN ACCOUNT OF THE CASE OF A MAN WHO HAD
NO EVACUATION FROM THE BOWELS FOR NEARLY
FIFTEEN WEEKS BEFORE DEATH.

A SHOEMAKER, aged 30, was of a costive habit, but had otherwise enjoyed good health. He used generally to have three or four stools in the week, till within eight months of his death. From that period he became much more costive, having an evacuation only once in a week, or sometimes once in a fortnight. When he passed a stool he felt some pain at the lower part of the belly.

The costiveness still went on increasing, so that he had no evacuation by the bowels for nearly fifteen weeks before he died.* In this state his belly began to swell, and at length it became of an enormous size. The distension seemed to be principally occasioned by wind accumulated in the bowels. There was a sudden re-action of the integuments of the belly on removing the pressure of the fingers, as in a

* The last evacuation by the bowels was on the 21st of February, and he died on the 4th of June.

bladder filled with air ; and a considerable quantity of wind was often passed through the œsophagus. No wind, however, was discharged by the rectum. He commonly complained of a good deal of pain about the navel, and sometimes over the whole abdomen. During the latter part of his illness, when the abdomen was swelled to a very large size, the peristaltic motion of the bowels could be distinctly seen through its parietes, and the bowels appeared very much distended.

Through the greater part of his illness, the patient's appetite for food was as good as in health, but within a fortnight of his death it failed him. He then took very little, most commonly a small quantity of wine or porter, with some toasted bread ; but these were often rejected by vomiting, about a quarter of an hour after they had been swallowed.

His pulse was generally about 84 or 86, was rather full, but not hard. When he felt any considerable increase of pain in the belly, it rose to above 100. Towards the latter part of his illness, the pulse was often above 100, and sometimes felt a little hard. During the whole of his illness he breathed with tolerable ease, notwithstanding the great distention of his belly, and he passed his urine without difficulty.

A short time before death, his face became extremely emaciated; and within the last 24 hours he complained of a very severe pain in the region of the stomach. During part of his illness he was under my care at St. George's Hospital. He was admitted March 8th, 1797, and was discharged, by his own desire, on the 24th of the same month, having received no relief.

While he stayed in the hospital the strongest purgative medicines were administered, both by the mouth and in the form of glyster, but without the smallest success. He took a bolus, containing five grains of calomel, and ten grains of gamboge, without its being followed even by an attempt at an evacuation by stool. Twenty grains of calomel and 30 grains of jalap were also given, but without any effect. An enema was administered, containing two drachms of gamboge, but it was very soon evacuated, unaccompanied with any fæces. Another was administered on the following day, containing three drachms of gamboge, but without the desired effect. Tobacco smoke was also injected in vain. He was directed to take a pill, containing four grains of elaterium; but this made him sick without producing any evacuation by stool. Shocks of electricity were passed through the

abdomen for several days, and cold water was dashed upon his feet; both of which means were ineffectual. He wished to try the effect of swallowing some crude quicksilver, as he thought he had once received some temporary ease from it before he was admitted into the hospital.* Accordingly he swallowed three ounces of quicksilver; but it was retained, no part of it having passed by the anus. Some globules of quicksilver appeared mixed with the fæces, on examining the body after death.

Having received no benefit from various trials during his stay in St. George's Hospital, he desired to be discharged. As his case was very singular, I visited him occasionally at his own house, and he was very frequently visited by a diligent pupil of the hospital, who gave me an accurate account of the state in which he found him.

After leaving the hospital, nothing was attempted for the patient's relief by my direction, except that a scoop was desired to be intro-

* He swallowed, at two separate times, two ounces of crude quicksilver for a dose, by the direction of Dr. Clough, before he came to St. George's Hospital. The quicksilver neither passed itself, nor produced any evacuation of fæces. He took, also, some strong purgative medicines, but without effect.

duced into the rectum, in order to break down the fæces mechanically, if they should be found within reach, and in that way to remove them. A candle being introduced into the rectum, it was found empty : the scoop therefore was not introduced. At length all trials were given up, his belly became more swelled, his feelings more distressing, and his strength more exhausted, till he died on the 4th of June.

On the evening of the following day I examined his body in the presence of Dr. Marshall, Dr. Clough, and some medical students.

When the abdomen was laid open, the stomach was found flaccid, but was healthy in its structure. The small intestines, except the duodenum, were very much distended, but still more so were the great intestines, which seemed to be above six inches in their transverse diameter. Upon the surface of both the small and the great intestines were observed little patches of narrow bands of a florid red colour, which were composed of a crowd of very minute blood vessels.

The small intestines, except the duodenum, were filled with air; the great intestines were filled partly with air, and partly with fæces. The fæces were principally accumu-

lated at the lower end of the sigmoid flexure of the colon, and were gradually less in quantity towards the cæcum. There were no fæces in the small intestines, except at the very lower end of the ilium; and the small quantity which was found there might have been forced through the valve of the colon by the pressure of the hand against the cæcum in examining the body. The fæces were properly coloured by bile, were of the consistence of soft mortar, and although they had been so long retained in the intestines were not more foetid than usual. The great intestines, where they were so much distended, had their muscular coat a good deal thickened, and the longitudinal bands were at least twice as thick and broad as in the natural state. At the lower part of the sigmoid flexure of the colon there was a very narrow stricture, accompanied with an ulcer, which was partly in the situation of the stricture, and partly in the gut immediately above it.

The stricture was so narrow as hardly to allow more than a large goose-quill to pass through it. The rectum under the stricture was sound.

The liver and the gall-bladder were in a natural state, but the other abdominal viscera could not be well examined on account of the

distended state of the bowels. They were probably healthy, as no symptom occurred during life, which led to any suspicion of disease in them. The cavity of the thorax was a good deal diminished in size in consequence of the distended state of the abdomen, but its viscera were free from disease.

On reflecting on this singular case, the following observations naturally arise:—The stricture at the beginning of the rectum is to be considered as the cause of all the symptoms. It was so narrow as to prevent the fæces from passing into the rectum. The rectum being empty, the urinary bladder was allowed to enlarge itself sufficiently for the ordinary accumulation of urine; and the patient neither made water with difficulty, nor was he obliged to void it frequently.

This case shows a very strong power in the system of accommodating itself, for a great length of time, to circumstances which appear almost incompatible with the continuance of life. As the fæces could not be evacuated on account of the stricture, the great intestines became larger in proportion to the accumulation of the fæces.

As the great intestines were frequently exciting a strong peristaltic motion in order to

evacuate the fæces, the muscular coat was thereby thickened and rendered stronger, so as to become in some degree proportioned to the difficulty in expelling them. The stricture, however, was too narrow for these efforts to overcome the difficulty.

The smell of the fæces was not more disagreeable than is usual in the sound state of the bowels, and they were not putrid. This probably took place in consequence of their being excluded from the air.

The stomach retained its healthy functions till within about a fortnight of the patient's death, and thus life was supported for so long a time under so formidable a disease.

I have not heard of any instance in which a person continued to live for so great a length of time without any evacuation of the fæces. I therefore thought that an account of this case might not be unworthy of being recorded, more especially as the facts are undoubted; and the examination of the body after death, explains in a satisfactory manner the symptoms which took place during life.

Since this paper was written, I have received from Sir E. Home, an account of a similar case, in a man aged 57; but the length of time in which the patient had no evacuation by

the bowels before his death, was only twenty days. When the abdomen was examined after death, a stricture was found at the upper part of the rectum, which was so tight as to seem as if the intestine had been drawn together by a piece of packthread.

The colon was a good deal distended with fæces, and the small intestines, as high up as the duodenum, were also somewhat distended, probably with air. There was no unusual distention in the duodenum and the stomach; but they seemed in every respect in their natural state.*

* Stark mentions the case of a Painter who had no alvine evacuation for three months. (*Ed.*)

ACCOUNT OF A CASE WHERE A PORTION OF THE
GREAT INTESTINE WAS SEPARATED AND DIS-
CHARGED.

Mrs. R., unmarried, of rather a spare habit, and about fifty years of age, had been very subject to costiveness. Twice in her life she had been attacked with vomiting, violent pain in her stomach and bowels, and great constipation. On both occasions, after the disease was removed, she continued for some time extremely weak.

The attack of the disease, which proved fatal, began about the first of November, 1795. She had violent pain of the stomach and bowels, more especially on the left side, accompanied with vomiting and obstinate costiveness. Evacuations from the bowels were procured by purgative medicines of considerable power. The stools at first had a foetid smell; but after some time they consisted merely of blood, and were very numerous for many days; some days amounting at least to forty.

At length the blood evacuated from the bowels became mixed with a kind of watery

fluid, exceedingly offensive to the smell, which seemed to be mucus. There were also some small masses or clots of coagulated blood. About three weeks before her death, she voided a substance, resembling gut, about a yard in length.

For ten days before passing this substance, and always after that event until she died, she had no evacuation from the bowels, unless she was held up in nearly an erect posture.

During a great part of the time that the disease lasted, the disposition to vomit was so constant that she could hardly keep any thing upon her stomach; but, at length, this symptom very much subsided, and she was nourished with mutton broth, jellies, coffee, &c. Within fourteen days of death, the pain in her stomach and bowels also diminished, except on the left side, where it remained without abatement.

Towards the end of the complaint the vomiting returned. She had a succession of cold and hot fits: her body and legs swelled; and she was troubled with hickup and phlegm rising in her throat. What she could take of medicine or nourishment, at this time, almost immediately excited the bowels to an evacuation by stool. This symptom continued for about three days.

She was seized with strong convulsions a few hours before her death, and after much suffering she expired.

Her pulse during this illness was very frequent, generally above a hundred and twenty; and she had a good deal of heat and thirst. The remedies employed were bleeding, blisters applied to the abdomen, fomentations, the warm bath, purgative medicines, and opiates; but they did not afford any considerable relief.

When I first looked at the gut-like substance, which Sir Walter Farquhar was so obliging as to send for my examination, I thought that it must have been some modification of the coagulable lymph thrown out by the vessels of the mucous membrane of the great intestine itself. Still it appeared very different from any lamina formed by the coagulable lymph which I had ever observed. I therefore examined it with a good deal of attention, and was soon convinced that it was really a portion of the colon. I clearly observed that the mucous membrane had very much the same appearance that it commonly has in that intestine. I then traced the circular muscular fibres with the most satisfactory distinctness. In some places the peritoneal coat was preserved; in others, the appendiculæ

epiploicæ, and a part of the longitudinal bands were distinctly seen. All these circumstances struck me with an irresistible conviction, that the substance which had passed could be nothing else than a considerable portion of the great intestine itself. No modification of coagulable lymph formed upon the inside of the intestine, could exhibit this distinct and peculiar organization of structure, which belongs only to one part of the intestinal canal.

As leave could not be obtained to examine the body after death, notwithstanding the most pressing intreaties, what change had taken place in the cavity of the abdomen is unknown; and it is hazardous to indulge in conjecture. It is not unreasonable, however, to suppose, that a violent inflammation had taken place in a considerable part of the great intestine, which had thereby lost its living principle; and that during this inflammation, a layer of coagulable lymph was formed round the gut, and inclosed it as in a case. This coagulable lymph would soon be converted into a sort of membrane, and the dead part of the gut would be thrown off. In this way a passage would still remain for the evacuation of the contents of the intestines; but as there was no muscular power in this newly-formed canal, the patient could have no stool

except in an erect posture, and then probably by the action of the abdominal muscles.

In William Hunter's collection of anatomical preparations, there is a substance very much resembling gut, which had been discharged during a violent purging; and which I examined with attention. It is about six inches in length, and is not so distinctly marked in its organization as that described in the foregoing case; but upon attentively looking at it, there can be discerned some muscular fibres, the remains of the *appendiculæ epiploicæ*, and a part of one of the longitudinal bands, which are the circumstances that characterize the structure of the great intestines. Accompanying it, there is a considerable portion of the inner membrane of the intestine, covered with a layer of coagulable lymph, which had been separated and discharged by stool.

The person by whom this portion of gut was passed lived two years afterwards: but the particulars of this case have not come to my knowledge.

Neither the case which makes the subject of this paper, nor the other at which I have hinted, lead to any immediate useful application in practice. They are not, however, altogether unimportant. They show the wonderful re-

sources of the animal œconomy, and prove that a person can live for three weeks after a very large portion of the great intestines has been separated and discharged; and that a person can live for two years, and therefore, probably, for a much longer time, after the loss of at least six inches of that bowel. This is a conclusion to which the mind could never have been led by reasoning, *a priori*. Any person, I am persuaded, perfectly acquainted with physiology and pathology, would consider it impossible that so large and important a part of the human body could have been lost, and that still provision should have been made by the powers of the animal œconomy for continuing the functions of life during so long a period.

I have searched those books in which it was most likely to find a case similar to that which has been related in this paper, but I have not met with one which bears the smallest analogy to it.

CASE OF STRICTURE OF THE RECTUM PRODUCED
BY A SPASMODIC CONTRACTION OF THE INTER-
NAL AND EXTERNAL SPHINCTER MUSCLE.

STRICTURES of the rectum are almost always produced by a thickening of its coats, in consequence of which the cavity of the bowel, at the seat of the stricture, gradually becomes more and more contracted. In the progress of this disease, ulceration very commonly takes place on the inner surface of the bowel, and the patient is ultimately destroyed, as the ulcer has no tendency of itself to heal, and no medicines which have hitherto been employed, are capable of communicating to it any healing disposition.

Another kind of stricture, however, much less formidable in its nature, occurs in the rectum, though very rarely; and it has hitherto been taken little notice of by practitioners. This kind of stricture is not attended with any diseased structure of the coats of the rectum, but depends upon a contraction, more or less permanent, of the sphincter of the anus.

Many years ago, a very well marked case of this kind fell under my notice. The patient had been long subject to a herpetic eruption on his right leg. This eruption suddenly disappeared, and a certain quantity of blood was afterwards daily evacuated by the bowels at the time of passing a stool for five or six months. When this discharge of blood ceased, there came on a good deal of difficulty in having a motion, which was immediately followed by a considerable sensation of pain in the lowest part of the rectum. This pain generally continued from a quarter to half an hour, and then entirely subsided until the next motion.

The stools were very small in their diameter, flattened upon their surface, and serpentine or twisted. In the course of the disease, when there was an effort to have a motion, the external sphincter of the anus sometimes hardly opened itself, so that fluid fæces only would escape at such times, and in small quantity; or if any solid fæces were allowed to pass, they were so squeezed by the very narrow aperture of the sphincter, as to become nearly as thin as a ribbon. At other times, the sphincter was much more disposed to open itself, and the stools were then of a considerably larger size, and of a less flattened shape. At

no time, however, were the motions of the usual size, or of a perfectly cylindrical form. An examination of the rectum was occasionally made *per anum*, and the rectum was always found so much contracted, as with difficulty to admit the fore-finger. This contraction extended to the upper limit of the internal sphincter of the anus, above which the cavity of the bowel was of its usual size. The internal membrane of the rectum in the contracted part was perfectly healthy. It was soft, not thicker than usual, and moved very readily on the inner surface of the contracted sphincter. The patient was in good general health, looked well, and was not the least emaciated; his pulse was of the natural frequency.

He was very averse to the introduction of a bougie, and this instrument was never passed into the rectum. Nothing therefore was done, except keeping the bowels free from costiveness, and pursuing a very temperate mode of living. The disease gradually became much less, and although it has not altogether subsided, yet hardly any inconvenience is felt from the remaining degree of contraction. It is now nearly seventeen years since its commencement.

The above case is very different in its nature from the usual stricture of the rectum, and it is

of considerable importance, that it should be distinguished from it in practice. In the one case, the prognostic would be favourable, and in the other case, it would generally be the very contrary. By a slight degree of attention, the two cases might be confounded, but when accurately examined, they may at all times be clearly distinguished from each other. In both cases, the fæces will be found flattened in their shape, small in their size, and in some degree serpentine or twisted; but the other symptoms will be found very different. In the common stricture of the rectum, the situation of the stricture is generally two or three inches above the outer sphincter, and there is a sound capacious portion of the bowels between the stricture and this sphincter. At the seat of the stricture, the coats of the rectum are felt more or less thickened, and not uncommonly there is a hard irregular ulcer in the cavity of the stricture.

Although this disease has, in its early stages, little influence on the constitution, yet, when it has made further progress, the powers of the constitution become very much weakened, great emaciation generally takes place, and the patient is destroyed. In the other species of stricture, produced by a contraction of the

sphincters of the anus, the contraction is found at the anus, or the extremity of the rectum: the inner membrane of the rectum is sound, and the general health is not impaired.

SOME OBSERVATIONS ON A PARTICULAR SPECIES
OF PURGING.

THE usual purgative evacuations to which the bowels are subject, take place in diarrhœa and dysentery. But there is another kind of purging that occasionally happens, which is not very generally known, and is almost constantly fatal. This consists of an evacuation of a matter resembling a mixture of water and lime, which is generally very frothy on its surface. When this kind of purging has once taken place, it is hardly ever radically removed, although it may for some time be occasionally suspended. It most commonly occurs in persons who have resided for a considerable time in a warm climate, and in those who have suffered from affections of the liver; but it likewise occurs, although rarely, in persons who have never been out of this country, and who have not suffered, as far as they know, from any disease in the liver. It occurs more commonly in men than in women; but this most probably depends, in a great

measure, upon a larger portion of men going to warm climates than of women.

When this species of purging takes place in a violent degree, the evacuations are very copious and very numerous. They are pale in their colour, as if lime were mixed with water, are very frothy, like yeast at the top, and often smell very sour. When the disease has changed into a milder form, the evacuations are of the consistence of pudding, and are more or less pale in colour.

Sometimes there is a difference in the colour of different parts of the same stool, and the motions do not, in this mild stage of the disease, occur oftener than two or three times in twenty-four hours. Sometimes there will even be a state of amendment approaching to a cure. The motions will then become figured, and of a darker colour, but very rarely of the same deep colour, as a perfectly healthy stool. This improved state, however, in general, continues only for a short time, and the patient falls back into his former state, and has frothy motions as above described. Patients labouring under this complaint have generally more or less of a sallow countenance, and are thin, but not very much emaciated. The appetite is generally good, but sometimes is deficient. The pulse is some-

times at the healthy standard, at other times it is a little accelerated. The tongue is generally covered with a white fur of moderate thickness ; but I do not recollect, that in any of the cases which I have seen, there was any soreness of the mouth, or aphthous appearance. The urine is a little deeper in its colour than natural, is generally transparent, but is sometimes turbid.

Patients afflicted with this kind of purging often live for several years, but the disease continues, subject to the changes lately described ; and they hardly ever recover.

When the general surface of the abdomen is examined in such patients, nothing unnatural is commonly discovered. There is no tumor in any part, nor any sense of pain on pressure of the abdomen. The bowels, however, are often more or less distended with air.

I have not as yet had an opportunity of examining the condition of the liver and the bowels in such patients after death. Some patients, who consulted me, died in the country ; in two or three instances, where the patients died in London, I was not able to make an examination ; and several who have consulted me are still alive.

The influence of medicine in this complaint

is generally very inconsiderable, and is hardly ever permanent. Still, however, the disease is capable of being in some degree relieved, and of having its progress retarded. Patients affected with it, sometimes receive advantage from very small doses of mercury, as half a grain of calomel, three or four grains of the *pilula hydrargyri*, or a few grains of the *hydrargyrus cum cretâ*, taken every night, or every second night. This small quantity of mercury sometimes stimulates the liver to a better and more plentiful secretion of bile, without impairing the strength of the constitution. Some advantage too is occasionally derived from the different kinds of bitter medicines, as *cascarilla*, *cusparia*, &c. combined with a few drops of laudanum. A medicine of this kind, taken twice a day, sometimes improves the digestion, when it is deficient, renders the motions more solid and less frequent, and increases the strength of the constitution. But these good effects are hardly ever permanent; for the patients almost constantly fall back, and have frequent and frothy stools, as formerly described.

Repeated returns of the complaint at length wear out the constitution, and the patients sink, from exhaustion.

Although this disease continues its progress

under every kind of diet, yet some patients have appeared to derive considerable advantage from living almost entirely on rice.

The mind, in some cases, seems to have an influence upon this disease. It is more apt to be increased, or to have its returns rendered more frequent, when the mind is embarrassed with business, or agitated with anxiety, than when it is not hurried in its exertions and is tranquil.*

* I examined the body of a patient who died of the species of purging above described by Dr. Baillie, about which he had repeatedly been consulted. He had served as an officer in the army in Ceylon, where the disease commenced, and he lived several years after his return to Britain, the purging during this period varying in degree at different times, but always assuming the character described in Dr. Baillie's account of the disease. The diseased appearances, found after death, were entirely confined to the great intestines, and particularly to the rectum. These consisted of a very considerable degree of thickening of the coats, great contraction of the canal, and of small and deep ulcers interspersed over the surface. (*Ed.*)

HUNTERIAN
SOCIETYAN ACCOUNT OF A PARTICULAR CHANGE OF
STRUCTURE IN THE HUMAN OVARIUM.

THE ovaria in women are subject to a great variety of changes from their natural structure. Many of these changes are exactly similar to what take place in other parts of the body; but there is one which seems peculiar to the ovaria, the nature of which has probably not been hitherto well ascertained. The change of structure to which I allude, is a conversion of the natural substance of an ovarium into a fatty mass, intermixed with hair and teeth. This sort of change is rare, although it occurs sufficiently often to have been seen by most persons who are very conversant in the examination of dead bodies. There are many such cases related in different books of dissections, but, as far as I have discovered, most commonly without any remarks on the mode of their formation; *

* It has been the opinion of some that hair, teeth, nails, feathers, &c. are animal vegetables or plants; and agreeably to this opinion, Dr. Tyern considers the growth of hair and teeth in the ovarium as a *lusus naturæ*, where nature endeavours

or they have been considered as very imperfect attempts at the growth of a fœtus in the ovarium, in consequence of connection between a male and a female. This conjecture rests, no doubt, on strong circumstances of probability ; and yet there are many powerful reasons which seem to oppose its being well-founded. Generation is a process which always depends on the action of a certain cause, viz. the usual connection between a male and a female ; and when effects similar to those in generation are perceived, it becomes very natural to conclude that this cause has been employed. The bias to such an opinion will become stronger, by reflecting on the passions that are known to influence mankind so powerfully, by which the agency of this cause is frequently excited. When a change, therefore, was observed in an ovarium, by which it was converted into a fatty mass with hair and teeth, this should seem to correspond so much with a change taking place in consequence of generation, that the mind would scarcely entertain a doubt of its arising from the same cause, and would readily infer, that it had been pre-

vours to produce something, and being disappointed in forming an animal, produces a vegetable. Vide Hooke's Lectures and Collection, No. ii. p. 11. and 15.

ceded by connection between the sexes. This doubt would still be lessened from the circumstance of a complete foetus being sometimes formed in the ovarium, when the usual means of generation had been employed. The following case, however, affords many reasons why we should be led to believe, that the ovaria in women have some power within themselves of taking on a process which is an imitation of generation, without any previous connection with a male, and it is with this view that I proceed to relate it.

In a female child, about twelve or thirteen years old, which was brought to Windmill Street for dissection, the right ovarium was converted into a substance, doughy to the touch, and about the size of a large hen's egg.

On cutting into the substance, I found an apparently fatty mass, intermixed with hair and an excrescence of bones. This circumstance startled me very much, as I had always been led to believe, that such appearances were a sort of imperfect conception. The case being very singular, I was led to pay considerable attention to the change in the ovarium.

The fatty mass was of a yellowish white colour, in some places whiter than in others ; it was very unctuous to the feeling, and consisted of

shortened or separated particles, not having the same coalescence which the fat generally has in the body. It became very soft when exposed to the heat of a fire, and penetrated through paper, on which it was spread, and rendered it more transparent. This paper burned with considerable crackling.

The hair with which the fatty substance was mixed, grew out of the inner surface of the capsule containing it; in some places in solitary hairs, but chiefly in small fasciculi, at scattered irregular distances. Besides these, there were loose hairs involved in the fatty mass. Some of the hairs were of considerable length, even to three inches; they were fine, and of a light-brown colour. They much more resembled the hairs of the head, than those commonly on the pubes, and they corresponded very much in colour to the hair of the girl's head.

There arose also from the inner surface of the capsule, some vestiges of human teeth. One of these appeared to be a canine tooth, one to be a small grinder, and two to be incisors; besides, there was also a very imperfect attempt at the formation of another tooth. These teeth were not fully formed, the fangs being wanting, but in two of them the bodies were complete. Each of them was inclosed in a proper capsule,

which arose from the inner surface of the ovarium, and consisted of a white thick opaque membrane.

There was a white spongy substance attached to the capsules of three of the teeth. The membrane of the ovarium itself was of considerable thickness, but unequal in different parts; its inner surface was very smooth, and its external surface irregular. The uterus was smaller than it is commonly at birth; it was perfectly healthy in structure; and on opening its cavity it exhibited the ordinary appearances of a uterus at the age of the child. The left ovarium was very small, corresponding to the state of the uterus. It clearly appears from this circumstance, that the uterus had not yet received the increase of bulk, which is usual at the age of puberty. The hymen was entire, and such as is commonly found in a child of the same age; a lanugo was just beginning upon the labia, not more than what is often found on the upper lip of a boy fifteen years old. Such are the circumstances of this singular case, and they present to the mind various points of consideration.

The formation of hair and teeth is a species of generation, for in fact it makes a part of it, and strikes the mind as being very different

from any irregular substance which is formed by disease. This formation, too, takes place in a part of the body which is subservient to generation, and where a complete foetus is sometimes formed. These facts corroborate the idea that the production of hair and teeth in the ovarium is a sort of imperfect impregnation. But when we take another view of the subject, there are reasons at least equally strong for believing that such productions may arise from an action in the ovarium itself, without any stimulus from the application of the male semen.

In the case just described, the uterus was as small as at birth, indeed more so, and the left ovarium, which was perfectly healthy, corresponded to the uterus. It had not been at all stimulated, nor did it appear capable of being stimulated by the application of the male semen. This seems to be a strong argument, for in a case where there was an ovum formed in one of the Fallopian tubes, the uterus was enlarged to more than twice its unimpregnated size; and, on opening its cavity, the decidua was observed as completely formed as in the impregnated uterus. The preparation of these parts is preserved in the collection of Windmill Street. Nothing can be a stronger proof, that when impregnation takes place out of the cavity of

the uterus, the organ still takes a share in the action, and undergoes some of the changes of impregnation. In another preparation, preserved in the same collection, where there was a foetus formed in the ovarium, the uterus was increased to more than twice its ordinary size, was very thick and spongy, and had its blood vessels enlarged as in an impregnated uterus. This fact becomes another very strong proof of the action of the uterus in the formation of an extra uterine foetus. In the case now detailed, however, the uterus had undergone no change, and did not seem to have arrived at that period when it could be capable of undergoing such a change.

Besides, we are not to consider the formation of teeth in the ovarium to be a quicker process than this formation commonly is in the head of a foetus; but in the present case the teeth having advanced fully as far as they are at some months after birth, this formation of teeth must have begun at least more than a twelvemonth before the death of the child. If then we consider the formation of teeth and hair as an impregnation, since the appearance of the child does not warrant us to believe her to have been more than twelve or thirteen years old, this brings the date of the impregnation to an

earlier period than can well be believed. From all these circumstances we might be led to suppose, that the formation of the hair and teeth was not in consequence of any connection with a male, but arose from some action of the ovary itself, in which the uterus did not participate. The existence of the hymen, especially in so young a girl, becomes a collateral confirmation of the same opinion, although much is not to be rested on it, when taken singly.

The following remarks will, perhaps, have some influence in removing the prejudices against this opinion. Hair is occasionally formed in parts of the human body, which are absolutely unconnected with generation. Encysted tumors sometimes contain hair. John Hunter has a preparation of this sort, which he cut out from under the skin of the eyebrow. This tumor was perfectly complete, and unconnected with the skin, except by the intervention of common cellular membrane, so as to have no communication whatever with the hair of the eyebrow. In this instance there was certainly a species of generation taking place in the encysted tumor itself, forming hairs as completely as in the common progress of the formation of a child. Such encysted tumors have

been found in other parts of the human body, and still more frequently in quadrupeds. In John Hunter's collection there are many specimens of encysted tumors from cows and sheep containing hair and wool. These tumors were perfectly complete, so as to have possessed a power of production within themselves, and many of them were found deeply seated at a considerable distance from the skin, which is the common parent of hair. In these tumors there is often the appearance of layers of cuticle, which is probably a preparatory step to the formation of hair. All these circumstances show most clearly, that hair may be formed without any species of generation as it is commonly understood.

But hair is as distinct a consequence of generation as teeth are, and as much a peculiar substance. If, then, the one be formed, there appears to be no reason why the other should not also be formed. The action which produces the teeth is not better understood than that producing hair; nor does the latter appear to be really in itself less connected with that species of generation arising from the approach of a male, so that teeth may probably be formed by a peculiar action in the ovarium itself, as well as the hair. It will tend to add further weight

to this opinion, to consider that many of the adult teeth are formed in a child after birth; and therefore their formation depends on an action taking place in the jaws at a particular period, and not on original growth. The same circumstance strikes more strongly in the occasional formation of teeth at an advanced time of life. Both of these processes take place after the animal has been formed, in consequence of a certain action being excited in a particular part of the body, and therefore there is less difficulty in believing that the same sort of process may go on in another part of the body not commonly employed in it. It seems reasonable also to suppose, that the ovaria should have a greater aptitude of taking on a process somewhat similar to generation than the other indifferent parts of the body, as they constitute a part of the organs which are so materially concerned in the real process itself.* These circumstances, when taken collectively, would

* As the formation of teeth and hair involved in a fatty mass may be said to be peculiar to the ovaria, and as there are strong reasons for believing, that this formation may take place without an intercourse between the sexes, it becomes difficult to account for this peculiarity in them, unless by supposing, that they have a greater aptitude of running into such a process than the other parts of the body.

seem to render it very probable, that the formation of hair and teeth in the ovarium does not necessarily depend on a connection between a male and a female (as has been the common opinion) but arises from some action within the ovarium itself, which is imitative of generation.

AN ACCOUNT OF A REMARKABLE TRANSPOSITION
OF THE VISCERA.

To John Hunter, Esq.

Dear Sir,

A VERY singular variety in the structure of the human body lately having occurred, I beg leave to communicate an account of it to the Royal Society, if you should think it worthy of their notice. It happens by a very uncommon concurrence of circumstances, that while I am naturally led by the ties of affinity to apply to you on this occasion, I can gratify my pride by thinking it is at the same time to the person who is possessed of the first reputation for his unwearied researches in one of the most extensive, as well as most interesting parts of the system of nature.

I am, &c.

M. BAILLIE.

Great Windmill Street, }
April 12th, 1788. }

Nothing tends more to illustrate the powers and the wisdom of nature than the investigation of the structure of animals. In them we find a most wonderful delicacy of mechanism, and which is exquisitely adapted for a variety of purposes. This, however, is not to be better seen by following nature in her common tract than by observing her wanderings. In these she often shows more particularly the extent of her powers, and throws light on her ordinary plans. It is such circumstances which give importance to the observation of singular phænomena. The variety in animal structure, an account of which I have the honour of presenting to this learned Society, is a complete transposition, in the human subject, of the thoracic and abdominal viscera, to the opposite side from what is natural.

Such a case is so extraordinary as scarcely to have been seen by any of the most celebrated anatomists, and indeed has been but very generally noticed at all. The occurrence has been mentioned, but it has not been particularly described so as to make it thoroughly known, or to establish its certainty. In the minds of many it was doubtful, whether such a variety did really exist. There is one circumstance that attends the account of the present case,

which has not always happened in the record of singular phænomena, viz. that it has been examined by physicians and surgeons of the first reputation in this city, and has been in some measure open to the gratification of public curiosity.

I have consulted many authors on this subject, but with very little satisfaction. I shall not enter into a detail of what I have met with in the course of these researches, but shall briefly notice, that when any *lusus* of this sort is mentioned, it is commonly briefly noticed, and the transposition is not marked as universal, or it is a change in the situation of some viscus from disease. In short, I have only found this singular *lusus naturæ* described by Cattiericus, M. Mery, and M. Daubenton; but by none of them is this description sufficiently particular. Enough has been said to point out that they had met with exactly the same sort of monstrosity; but many circumstances have been omitted, which I hope will be supplied by the present account, which I shall now lay before the Society.

The person who is the subject of this paper was a male, nearly forty years of age, somewhat above the middle stature, and of an active shape. He was brought to Windmill Street for dissection. On opening the cavities of the

thorax and abdomen, the uncommon situation of the viscera was so striking as immediately to excite the attention of the pupils who were engaged in dissecting the body, and Mr. Cruikshank, as well as myself, were informed of the singularity. We were much surprised at the appearance, and I immediately began to examine every part of the change with considerable attention. For this purpose, after having a drawing made of the appearances as they were found on opening the body, I next day injected it. The repeated dissections have furnished various views, which are represented faithfully by drawings, and which I hope will enable me to give a tolerably distinct account of this *lusus naturæ*. In my description I shall not enter into unnecessary minutia; this would render the paper less suited to the Society, would not convey more information to persons thoroughly acquainted with anatomy, and would rather tend to obscure what is more important to those who have not given so much attention to subjects of this nature. It may not be improper to observe, that, besides the transposition in the viscera of this person, there are several peculiarities which sometimes occur. I have taken notice of them in my description, although they are entirely independant of the transposition.

Description of the Thorax.

The mediastinum inclined obliquely downwards, to the right side, fully as much as it commonly does to the left side of the chest. The pericardium too inclined obliquely to the right side. On gently pressing it away from the lungs, the phrenic nerves came distinctly into view, in their common situation; but the right phrenic nerve ran more obliquely, and was longer than the left. The lung upon the right side was divided by a single oblique fissure into two lobes, having at the same time a deficiency opposite to the apex of the heart; and the lung on the left side was divided into three lobes, exactly contrary to what is found in ordinary cases.

On opening the pericardium the apex of the heart was found to point to the right side nearly opposite to the sixth rib, and its cavities as well as large vessels, were completely transposed. What are commonly called the right auricle and ventricle were situated on the left side, and the left auricle and ventricle on the right. The pulmonary artery ascended towards the right side of the chest. The aorta also directed its arch to the right: and the vena cava superior,

as well as inferior, was seen opening into its auricle on the left side of the spine. There was nothing remarkable in the size or general figure of the heart. On the outside of the pericardium the transposition of the larger vessels was very striking. The longer subclavian vein passed from the left side obliquely to the right, before the branches which are sent off from the arch of the aorta. The left carotid and subclavian arteries arose from the arch of the aorta by one common trunk ; the right carotid and subclavian arose separately.

In the posterior mediastinum, there was a change corresponding to that already described. The descending aorta passed on the right side of the spine. The œsophagus was before it, inclining more and more to the right, towards its lower extremity, and it at length perforated the diaphragm, somewhat on the right side of the spine.* The thoracic duct was seen in the middle, between the descending aorta and the vena azygos in some places forming a plexus of small branches ; in another dividing itself into two branches, which afterwards re-united in a

* The vena azygos was on the left side of the spine, opening in the common way into the vena cava superior, which I formerly mentioned to be also transposed in its situation.

common trunk, and at length, climbing up to terminate in the angle between the jugular and subclavian veins on the right side of the body. The recurrent nerve of the par vagum on the right side passed round the beginning of the descending aorta, and on the left passed round the common trunk of the carotid and subclavian arteries. The large intercostal nerves being exactly under similar circumstances on each side, it was impossible there could be any transposition in them. From the foregoing description it appears that every part in the thorax, admitting of such a change, was completely transposed.

Of the Abdomen.

The Liver was situated in the left hypochondriac region, the small lobe being towards the right and the great lobe in the left side. The ligaments uniting the liver to the diaphragm corresponded to this change, the right transverse ligament being longer, and the left being shorter than usual. The suspensary ligament could undergo little change, except being pushed to the left side along with the liver. On pressing the liver upwards, so as to exhibit its posterior and under surface, the gall-bladder was seen on

the left side, preserving its proper relative situation to the great lobe of the liver, and the vessels of the portæ were found transposed, corresponding to the change of circumstances. The hepatic artery was found climbing up obliquely from the right towards the left, before the lobulus spigellii, and entered at the portæ into the substance of the liver by two or three branches on the right of the other vessels. The ductus communis cholidochus was on the left of the other vessels, being formed from the ductus hepaticus and ductus cysticus in the common way, and it passed obliquely downwards on the left, to terminate in the duodenum. What was most remarkable, indeed I never saw or heard of any such instance before, it terminated in the fore part of the duodenum. The vena portarum passed behind the hepatic artery and ductus communis choledochus ascending obliquely towards the left side.

The Spleen was situated in the right hypochondriac region adhering to the diaphragm in the common way. What was very remarkable was, there being three spleens, nearly of the size of a pullet's egg, found adhering to the larger spleen by short adhesions, besides two other still smaller spleens which were involved in the epiploon at the great end of the stomach. I

never saw so many small spleens in any one subject. The pancreas was found on the right side behind the stomach, running obliquely from the spleen to the curvature of the duodenum, and had its duct entering in common with the ductus communis choledochus into the cavity of that intestine. The splenic vessels were passing along the upper edge of the pancreas to the right side, corresponding to the change of situation in the pancreas and spleen.

The stomach was situated on the right side, partly hid by the small lobe of the liver passing to the left, and terminating in the pylorus, rather on the left side of the spine. The duodenum took a most singular course; it first passed to the right side, behind the small end of the stomach; it then turned upon itself, towards the left side, it afterwards took its proper sweep to the right side, passing behind the superior mesenteric artery and meseriaca major vein. The mesentery began to be formed on the right side, instead of the left, as in ordinary cases. The ilium terminated in the great intestine on the left side; and there was in it a diverticulum of considerable size, a lusus which not unfrequently occurs. The cocum was situated on the left psoas magnus and iliacus internus muscles. The transverse arch of the

colon passed from the left to the right side of the body, and the sigmoid flexure crossed over the right psoas, to get into the cavity of the pelvis.

The kidneys had their vessels transposed, as we shall remark more particularly afterwards; the renal capsules had undergone no change, as no variety could be produced by a transposition.

The aorta passed between the crura of the diaphragm into the cavity of the abdomen, and adhered in its course to the spine on the right side of the vena cava inferior. Its branches were directed in their course corresponding to the peculiar situation of the viscera.

The splenic and coronary arteries were passing to the right side, and the hepatic artery obliquely to the left. The superior and inferior mesenteric arteries were directed to the right side. There was no change in the spermatic arteries, any transposition in the testicles, if such a thing could take place, not being capable of affecting them. The lumbar arteries could also undergo little change, except that the left lumbar arteries must necessarily, from the peculiar situation of the aorta, be the longest. The vena cava inferior perforated the tendinous portion of the

diaphragm, and adhered in its course to the spine on the left side of the aorta.

The right emulgent vein was much longer than usual, passing from the right kidney before the aorta, to terminate in the vena cava superior; and the left emulgent much shorter, passing from the left kidney to the vena cava, which was situated on the left side of the spine. The right spermatic vein was found to open into the right emulgent, and the left into the vena cava inferior, about an inch under the left emulgent. The vena portarum was changed from its natural course, passing obliquely upwards to the left side, and its large branches, viz. the vena splenica, meseriaca major and minor, were all directed towards the right side of the spine.

There was no change in the intercostal nerve within the cavity of the abdomen; nor does it seem to be capable of being affected by any transposition of parts. We see then, that there was a complete transposition of the abdominal viscera, each of them preserving its proper relative situation to the others.

I examined the brain, organs of sense, and of generation, the muscles, and the blood-vessels of the extremities, but I found nothing in them remarkable. Indeed, I had no expectation of

it; for all these parts are perfectly independent of thoracic or abdominal viscera.

The person seems to have used his right hand in preference to his left, as is usually the case, which was readily discovered by the greater bulk and hardness of that hand, as well as the greater fleshiness of the arm. It was not to be expected he should be left-handed; but I mention this circumstance too, with a view to satisfy a curiosity which I know has been excited in many who have heard of this *lusus*.

I have been at considerable pains to learn something of the history of this person during life, but the particulars I have heard are applicable only to the circumstances of man in general, and have no connection with singularity of structure. It may be right to mention that the person, while alive, was not conscious of any uncommon situation of his heart; and that his brother, whom I have seen, has his heart pointing to the left side as in ordinary cases. Indeed, there was little reason to expect that we should meet with any thing particular in the account of his life. His health could not be affected by such a change of situation in his viscera; nor could there arise from it any peculiar symptoms of disease. Still less could there be any connection between such a change

and his dispositions, or external actions. He might have known that his heart was directed towards the right side ; but if we consider how little every person, especially of the lower class, is attentive to circumstances not very palpable, it was scarcely to be expected he should know of it.*

Every singular phænomenon in animal structure is worth remarking, even if it should not immediately lead to any useful purpose ; but it becomes more important, if it should tend to throw any light upon the principles of nature in the formation of animals. It is reasonable to think, that nature should follow some general plan in her operations. There is some effect which she has in view, and she will generally employ the same means to produce it. In the structure of any animal, her view is to form such a combination of parts as to render the animal fitted for certain purposes. She will commonly form the same combination when the same purposes are to be served ; or, in other

* Since the above lusus has occurred, I have seen, in the possession of Mr. Payne, a fœtus at the full time, with the viscera transposed. In the anatomical collection of Christ's Church, in Oxford, there is a heart transposed, that had belonged to a very small fœtus ; but the fœtus itself is not preserved.

words, there will be the same structure in the same species of animals. The same effect, however, may be produced, without a strict adherence to the employment of the same means, as we find to be the case in all human inventions, and therefore there is no reason why nature should not sometimes deviate from her ordinary plans. Accordingly we find there is much variety in animal structure; but this does not commonly affect the animal functions. Under this restriction the variety is so great in the appearances of every part of an animal, that it is almost impossible to examine any two animals of the same species without remarking many differences.

In the bony compasses of an animal we find little variety in the extremities of bones, where there is the apparatus of a joint, because a particular shape is best adapted to a particular kind or latitude of motion. In other parts of the bones, when a difference of features is not material, there is great variety, as in the foramina, depressions, ridges, and sutures of bones.

The same general rule will apply to variety in muscles. The principal object is a certain insertion near a joint, so as to give a determined direction of motion. With respect to such insertions, there is, comparatively speaking, little

variety ; but there is a great difference in the bodies and connections of muscles, which have no share in the regulation of the motion.

There is no part of an animal where there is a greater variety than in the distribution of blood-vessels. The reason of this is very obvious. The only object in the distribution of blood-vessels is, to carry blood to every part of the body, and bring it back to the heart. The parts of an animal, in order to be nourished, must be replenished by successive changes of fresh blood ; but it surely cannot be an object of importance whether the blood passes by one route or another. Hence the variety in blood-vessels is extremely great. Still, however, there is a method in the deviations of nature, so that they may be marked or noted, the same varieties occurring in different animals.

It cannot be at all important to the function of a viscus, whether it be in one mass, or in separate portions. The structure being the same, the same action will take place. Hence we often find two kidneys joined together, forming one mass ; and not unfrequently two or three spleens besides the common one. Neither can it be important, whether a viscus should always be of the same shape, because its functions do not depend on shape, but on

structure: accordingly we find in this particular much variety.

Many of the viscera are connected together in their functions, or by the junction of large blood-vessels, in such a way as to require nearly the same relative situation among themselves. This also becomes necessary in order to preserve the general shape of the animal. Accordingly we find, that when any important viscus is changed in its situation, it affects the situation of other viscera, requiring in them a similar change. We saw, in the person who is the subject of this paper, that a change in the situation of the heart and liver was accompanied with a change of situation in the stomach, spleen, pancreas, and, in short, of the whole abdominal viscera. This, however, is a great deviation in nature; for it is nothing less than changing almost the whole vital system in an animal, and therefore it rarely happens.

In such a change it does not appear, that the functions can be affected, as they depend on structure and situation, which are both preserved. Hence the person who is the subject of this paper arrived at the age of maturity, and might have continued to live to an extreme old age.

The human machine might have been con-

structed in this way generally, and under such circumstances what is now called the natural situation of parts, would have been as singular as the present phenomenon.

There appears to be less variety in the nervous system of animals of the same species than in most parts of the body. There is scarcely any difference in the appearance of the brain, and much less in the distribution of the nerves than of the blood-vessels.

There is also little variety in the organs of sense; perhaps the mechanism in both these is nicer, so that a considerable deviation would interfere with their peculiar functions.

The most common great deviations which nature produces in the structure of an animal are various kinds of monstrosity, by which the animal often becomes unfit for continuing its existence. Why nature should in its greater deviations fall into a very imperfect formation, much below the standard of her common work, does not appear very obvious.

It seems that there might have been many varieties where the functions could have been preserved. Perhaps it is with a view to check the propagation of great varieties, so as to preserve an uniformity in the same species of animals.

It has been much agitated, whether monstrosities depend on the original formation, or are afterwards produced in the gradual evolution of an animal. This does not appear to be a question of much importance; nor, perhaps, can it be absolutely determined. But upon the whole it is more reasonable to think, that the same plan of formation is continued from the beginning, than that at any subsequent period there is a change in that plan.

It may be observed, that it is exactly the same creative action which produces the natural structure, or any deviation from it; for in cases of deviation the action is either carried too far, ceases too soon, or is diverted into uncommon channels. This will explain the various kinds of monstrosity from redundancy, deficiency, or transposition of parts.

OF A REMARKABLE DEVIATION FROM THE
NATURAL STRUCTURE IN THE URINARY
BLADDER.

THE subject of the present paper does not seem to throw any considerable light either on the physiology or pathology of the human body, yet it is not altogether unimportant. It exhibits a view of a singular variety in a very essential part of the structure of the body, which has been rarely observed, and I believe, which has not as yet been fully described.*

The person in whom this variety was found was a man of about forty years of age, of a short stature, of a robust habit, and who had led a very dissolute life. Having occasionally got a good deal of money, by exhibiting himself to the public, and having acquired habits of idleness, he very readily fell into the habit of drinking. At length he was very rarely sober,

* There is a short history of a similar monstrosity, by James Mowat, surgeon at Langholm, in which, however, many particulars have been omitted. Vid. Edin. Essays, vol. iii. Article 14.

and in one of his fits of inebriety, he died, and was brought to Windmill Street for examination.

External View. In the external view of the abdomen was seen, immediately above where the symphysis pubis is commonly placed, a vascular pulpy mass, about two inches in its transverse diameter, and an inch and a half from its upper to its lower edge.* This mass was seated in a deep bed, scooped out, as it were, from the lower part of the skin and muscles of the abdomen. When this mass was particularly examined it somewhat resembled the posterior surface of the tongue, but without any follicular appearance. In three places it projected into tubercles of no very considerable size, and upon two of these the ureters opened. At the upper edge of this mass the skin was in one part finer than natural, and a little puckered. This was all the appearance of navel in this subject, for there was none in the usual place. At the lower edge of this mass, and about the middle of that edge, were situated two distinct rounded orifices, and a little above their level was a considerable canal,

* This pulpy mass was covered with a thick layer of viscid mucus, in order to defend it from the stimulus of the salts contained in the urine.

large enough to admit a goose quill, and leading to the substance of the prostate gland.

About half an inch under the vascular mass described, the penis was seen, of the common size with respect to transverse diameter, and little more than an inch in length. The whole upper surface was somewhat hollow, and had a finer skin than the common covering of that part. Near its extremity, the canal corresponding to the urethra opened by a pretty large oval orifice. The glans was of the common texture, but somewhat different in shape, being hollow upon the upper surface. From its being bare and exposed to friction, it was covered by a thicker cuticle than usual. Under the glans there was a loose projection of skin, corresponding to the prepuce. It was connected to the glans by a cord like the frænum, but was neither sufficiently pliable nor large to cover the glans, as in ordinary cases.

There were two considerable oblong swellings at the groin, covered with hair, the swellings were formed of fat, and the spermatic chords passed through them. They terminated below in a sort of corrugated tuberculated skin, which formed the scrotum. The cellular membrane on the inside of it, instead of being spongy as

usual, was of a very firm compact texture. By this membranous texture the testicles adhered very firmly to the inside of the skin of the scrotum, and the scrotum was divided into two lateral cavities by a stronger septum than I ever recollect to have seen.

Internal View. Upon the inside, corresponding to the situation of the vascular spongy mass, there was a sort of projection, not unlike the posterior outer view of the urinary bladder. It consisted of an arrangement of muscular fibres, similar to those in the bladder, but somewhat stronger, and had opening through it the two ureters. These ureters were larger than the ordinary size, and had probably been artificially enlarged.

This person had a custom of thrusting a knitting needle up each ureter when he exhibited himself to gratify public curiosity, which might, perhaps, increase the size of the ureters near their external openings. Above this appearance of bladder there was a considerable space between the recti muscles, occupied by tendon and the peritonæum. In the middle of this space passed the umbilical vein, degenerated into a sort of ligament, so as to reach the upper edge of what corresponded to the bladder, where it was lost behind the integuments. The

umbilical arteries climbed up each side of what corresponded to the bladder, and lost themselves behind the integuments at the same place with the vein. This place corresponded to the fine puckered skin above the vascular mass, mentioned in the external description.

Upon each side of the substance, corresponding to the bladder, the recti muscles passed, to terminate in the ossa pubis, at nearly four inches distance from each other.

Between the substance corresponding to the bladder and the rectum, were situated the prostate gland, the vesiculæ seminales, and the extremities of the vasa deferentia.

The prostate gland was scarcely one half its usual size, and had an opening externally under the muscular mass by a large canal, as formerly mentioned. The vesiculæ seminales were scarcely more than a third of the ordinary size; the extremities of the vasa deferentia were enlarged as in the natural structure, and opened by two rounded orifices externally under the vascular mass.

The rectum was perfectly natural. The penis arose by two crura from the ascending rami of the ossa ischii, being nearly of the usual size.

The crura ascended for more than two inches

before they united, and between them was situated the corpus spongiosum urethræ. In that body was a canal, corresponding to the urethra, having the same vascular living, and the openings of lacunæ. This canal communicated with a considerable cavity, situated at the bulb of the urethra, and having the same lining of membrane with the urethra itself. In this cavity could only be seen the orifices of the lacunæ, and the canal terminated posteriorly in a cul-de-sac.

The erectores penis and muscles corresponding to the acceleratores urinæ had very nearly the natural appearance, but the transversi perinœi were seven or eight times larger than usual. The muscles about the anus were natural.

The testicles were of the common size, but the tunica vaginalis was almost obliterated on each side, probably from inflammation. Their texture was perfectly natural; they were supplied in the common way with blood vessels; and the vasa deferentia and the epididymis seemed of the ordinary structure. The vasa deferentia and a portion of the epididymis were injected with quicksilver, to show that the canals were pervious. On each side the cremaster muscle was stronger than I almost

recollect to have seen it. There was also a hernia upon the right side, in which a portion of omentum was lodged.

In the anterior part of the pelvis, where the symphysis pubis is usually situated, there was a deficiency of bone for nearly four inches. This was filled up by a broad ligamentous membrane which became a support to the viscera of the abdomen, and kept some of the parts mentioned in a fixed situation. The two acetabula were also removed to a somewhat greater distance from each other than is ordinary in the male pelvis.

In every other part of the body of this person the structure was perfectly natural.

Such are the particulars of this very uncommon monstrosity, and they afford very little room for reflection.

It appears clearly, from the account given, that the person was in every respect a male, and not a hermaphrodite. The testicles and vasa deferentia were natural, so that the secretion of the semen could take place as in ordinary cases.

This state of the testicles was probably accompanied by the venereal appetite as in other men, but still the person may have been said to have been impotent.

The vasa deferentia terminated by two orifices at the lower part of the abdomen, and there was no canal by which the semen could be ejected with force sufficient for impregnation.

The prostate gland too, and vesiculæ seminales were of a very diminutive size, so that their function, whatever it may have been subservient to impregnation, was probably imperfect. The openings of the vasa deferentia did not bear the same relative situation to the penis as in the ordinary structure ; yet I have no doubt that titillating the glans, so as to produce erection, promoted the secretion of the semen as in other men. We are led to this opinion from considering the general structure of the organs, and it is, in some measure, confirmed by the imperfect knowledge we have of his life. There was a woman who lived with him as his wife or mistress, and from his very impudent behaviour in the company of women, he would appear to have been sufficiently salacious.

The want of a bladder in this person shows simply, that it is not a part essentially necessary to the body, but is only a reservoir to contain a certain quantity of urine for the greater convenience of the animal. This might be readily

inferred from reasoning *a priori*, without a single instance of its having occurred; but it is certainly known from the classes of animals in whom no bladder is found.

The deficiency of the anterior part of the pelvis, and the distance between the two acetabula being a little greater than usual, had some effect upon his manner of walking. His step was less firm, the lateral motion of his body greater, and his progress consequently slower than common.*

* Since this paper was written I have met with a monstrosity of the same kind, in a young man about twenty, who is a native of Cologne. In the external appearance of the abdomen there is no difference between this case and that which I have described, except that in the former the vascular pulpy mass was more protuberant than in the latter, and the opening of the ureters more dependent. The conjecture which I have formed about the venereal appetite is confirmed by what I have learned from this person. His penis is often erected at the view of females, but, from the structure of the parts, he is incapable of producing impregnation. — A description of the external appearance of the parts in this person has, I understand, been given by professor Bonn of Amsterdam.

ON THE EMBALMING OF DEAD BODIES.

THE object of this paper is to describe a method of embalming dead bodies, which shall effectually preserve them from decay, and which is more easy of execution than any that, as far as I know, has been practised by modern anatomists.

This operation is so seldom performed, that very few, I am persuaded, even of our best surgeons, have arranged all the necessary processes of it in their own minds; and if they were required to perform it, they would be obliged to consider of some plan for the immediate occasion. A plan, thus hastily adopted, would most probably not be the best, would be productive of some delay, and be attended with unnecessary difficulty. I therefore thought that it might be an object of some importance to surgeons to have laid before them a regular method of embalming dead bodies, not easy of execution, and which they may adopt, if they should ever be required to perform this operation.

In considering this subject, it is hardly pos-

sible to avoid looking back to the methods of embalming practised by the Egyptians, as described by Greek writers. The only ancient authors, I know, who have described the method of embalming among the Egyptians, are Herodotus and Diodorus Siculus. They had both travelled into Egypt, and wrote at the interval of four hundred years from each other. The description of the method of embalming by Herodotus is more distinct and particular than that by Diodorus. Herodotus has described three methods. Each of these had a fixed price; and they seem to have been accommodated to persons of different ranks or fortune. The most complicated and expensive method of embalming is thus described by him.

The embalmers remove the brain through the nostrils, partly by a curved piece of iron, and partly by pouring in drugs. With a sharp Æthiopian stone they next make an opening into the abdomen, near the flank, and extract through this opening the intestines. These they clean, wash with palm wine, and then sprinkle with a powder composed of aromatic substances. They next fill the cavity of the abdomen with myrrh, cassia, and other odorous substances, but not with frankincense, and sew up the body. They now salt the body in na-

tron for seventy days, at the end of which time they wash it, and involve it in many folds of cotton besmeared with gum, which the Egyptians use as glue. The bodies so prepared are returned to the relations, who inclose them in wooden cases resembling the human form, which are placed upright, close to the wall, in an apartment appropriated for this purpose.

For persons in moderate circumstances, a cheaper mode of embalming was employed. No incision was made into the body, nor were any of the bowels extracted; but glysters, consisting of the oil of cedar, were thrown into the bowels by the anus, were prevented from escaping, and were retained there for seventy days, during which the bodies were salted with natron. The bowels were in this time corroded by the oil, and at the end of the period, drawn out through the anus. The external flesh was wasted by the natron, so that the skin and bones only of the deceased remained; and in this state the bodies were restored to the relations.

There was a third method of embalming, much more simple and less expensive, which was accommodated to persons in low circumstances. This consisted in making some particular ablution of the bowels, and salting the body with

natron for seventy days, at the end of which time it was sent back to the relations.

The account which Diodorus Siculus has given of the art of embalming among the Egyptians, is very general, in some measure confused, and differs in several essential circumstances from that of Herodotus. It is in substance as follows. An opening was made by means of an Æthiopic stone into the side of the abdomen, and all the viscera were extracted through this opening, except the heart and the kidneys. These were washed with palm wine mixed with odorous substances. The body was also washed with palm wines, and then was anointed with oil of cedar for more than thirty days. The body was further preserved from decay by myrrh, cinnamon, and other anomatic substances; after which it was restored to the relations. No mention is made of the extraction of the brain through the nostrils.

It would at present be vain to enquire whether these accounts be accurate, or to attempt to reconcile them to each other. In the course of four centuries, between the times of Herodotus and Diodorus Siculus, a considerable change might have taken place in the mode of embalming dead bodies; and in the lapse of two or three thousand years, the soft parts of bodies,

which had been originally well preserved, may have mouldered away. If this effect has not taken place, these accounts must be considered as inaccurate; because in the greater number of mummies which have been examined in modern times, the bodies only have been found. The account which has been given by both historians shows, that the Egyptians had made considerable progress in the art of preserving dead bodies from decay; but it does not appear to have been founded on any extensive knowledge of anatomy.

At the revival of learning, when the science of anatomy was still in a very rude state, it is not likely that anatomists would direct any part of their attention to the embalming of dead bodies. Their time was fully occupied in learning the structure of the grosser parts of the human body, and they had not even become acquainted with the art of making the most simple preparations. When anatomy, however, had attained to a considerable degree of perfection, and anatomists had advanced somewhat in the art of making preparations, it is highly probable that they would attempt to embalm dead bodies. Ruysch is said to have prepared dead bodies, so that they seemed rather to be asleep than without life, and to have preserved them in this

state. This could be accomplished by no other process than that of embalming; but as he never could be prevailed upon to explain to his pupils even his method of making common preparations, it is not at all likely that he would be more communicative about the art of embalming.

Among modern anatomists, I am persuaded, that there never was any fixed or regular method of embalming dead bodies, but that, when this operation was required, each anatomist followed a method of his own. William Hunter used to explain, in his lectures, the method of embalming which he employed, an account of which I shall give before I take notice of another, which is as effectual with respect to the preservation of the body, and is much more easy in the execution.

According to William Hunter's method, embalming is begun as soon after death as decency will permit. In the summer season it should not be delayed beyond twelve hours, but in winter, it may be put off till twenty-four hours, after death. In all cases where a person dies suddenly, who had before enjoyed good health, the body begins very soon to putrefy, and putrefaction advances very rapidly; therefore, if the body of such a person is required to be em-

balmed, the operation should take place after a very short interval; viz. of not more than two or three hours after death.

The first operation is to fill the blood vessels with a fluid highly antiseptic, and so subtile as to penetrate into the minutest vessels of the body. For this purpose the essential oil of turpentine is employed, in which a small proportion of Venice turpentine has been dissolved. Vermilion is added to this fluid, in order to diffuse a florid colour over the skin. More or less of the florid colour is diffused in different cases, which depends upon circumstances that cannot always be ascertained. In order to fill the blood-vessels with this fluid, an injecting pipe is inserted into one of the inguinal arteries, and the fluid thrown in by means of a common syringe. The injection is continued, till the vessels of the skin show that the antiseptic fluid has penetrated to them, and till there is great difficulty in throwing in more fluid. The body is then allowed to remain for some hours undisturbed, and that it may be more thoroughly impregnated with the antiseptic fluid. The cavities of the abdomen and thorax are now laid open, and their viscera taken out. The natural juices are then squeezed out from the body, and also from the viscera, by gentle pressure with the hands.

The blood-vessels of the viscera are now to be injected a second time with the essential oil of turpentine and vermilion, by putting pipes into their principal arteries. Ligatures are then made upon them, and the whole surface of the viscera is well washed with camphorated spirits of wine. In the same manner there is a second injection made of the blood vessels of the body, by means of a pipe inserted into the beginning of the aorta; and the inner surfaces of the thorax and abdomen are afterwards washed with camphorated spirits of wine. The viscera are now replaced in the thorax and abdomen. All the interstices between the viscera are next filled with a powder composed of camphor, resin, and nitre, which powder is besprinkled with the essential oils of rosemary and lavender. The cavities of the thorax and abdomen are then very closely sewn up.

The cavities which open on the surface of the body, viz. the nostrils, the mouth, and throat, the passages of the external ears, the rectum, and the vagina in women, are next filled with the powder above mentioned. The humors of the eyes are also let out, so that the eyes sink back into the sockets. Some powder is to be placed between the eyes and the eyelids, and the two eyelids are to be brought in contact

with each other. The whole of the body is then rubbed over with the essential oils of rosemary and lavender, and it is afterwards placed upon a bed of Paris plaster, that the moisture which oozes from it may be absorbed.

At the distance of more than twenty years since I heard William Hunter explain his method of embalming, it is very possible that I may have forgotten some of the smaller circumstances which he mentioned; but I am sure that nothing has been omitted on which the success of the operation can at all depend.

This method of embalming is certainly effectual in preserving a human body from decay for any length of time; but it is extremely tedious, occupying many hours, and is attended with much unnecessary difficulty. In reflecting on this subject more than twelve years ago, I thought it very possible, that a body might be embalmed without cutting out all the viscera, tying up their vessels, injecting them a second time, then tying up the remaining vessels of the body, and also making a second injection of them, which various processes constitute the great difficulty, and consume unnecessarily a great deal of time, in this method of embalming.

I then made an experiment of embalming the

bodies of three children after a more simple method. In all of these bodies it succeeded perfectly. All of them are still in the most perfect preservation, although they were embalmed more than twelve years ago; and from their present appearance I conclude, that they may continue free from decay for any length of time.

These experiments, from motives of ease and convenience, were made on children, who either were still born, or had died almost immediately after birth; but the same method of embalming will be effectual, whatever may be the size of the body.

An injecting pipe was put into the umbilical vein, and the blood-vessels of the whole body were well filled with the antiseptic fluid formerly mentioned, consisting of essential oil of turpentine, with a small portion of Venice turpentine dissolved in it, and well charged with vermilion. Had the children been older, or had the experiment been made on a full grown body, the injecting pipe would have been put into one of the inguinal arteries, and all the vessels of the body would have been injected from it. This will form the only difference between the method of embalming a child newly born, and that of embalming a person of any age, when the

umbilical vein is obliterated. It ought to be remarked, however, that when the vessels of the body, generally, have been injected from one of the inguinal arteries, a ligature should be immediately made on this artery above the pipe, and the pipe should afterwards be taken out, and put again into the same aperture of the artery, but directed towards the foot. The vessels of this limb should then be filled with the antiseptic fluid, a ligature should be made on the artery under the pipe, and the pipe should be taken out. In this way the injection of the vessels of the body will be complete.

When the body is of such a size, as to be capable of being readily put into a tub of warm water, for an hour previous to the injection of its vessels, there will be an advantage in doing it, because the antiseptic fluid will penetrate into minuter vessels of the skin, and give it a more florid colour. This, however, is not at all necessary for the preservation of the body. After the body has been injected, it should remain at rest for an hour or two, that the fluid may have time to settle. The thorax and abdomen should then be laid open, exactly in the same manner as they are when a body is examined for the purpose of ascertaining any morbid appearances in these cavities.

An opening should next be made into the duodenum, about two or three inches distant from the pylorus, and a large injecting pipe inserted into it, with its direction towards the stomach. Water should be thrown through this pipe by a syringe, so as to wash clean the stomach, the œsophagus, the pharynx, the mouth, and the nostrils. The pipe should then be taken out, inserted into the same opening in the duodenum, but directed towards the intestines. Water should then be thrown in to clean the small and the great intestines.

When this has been done, a ligature should be made upon the œsophagus at its upper extremity, and another ligature should be made upon the rectum, as low down in the pelvis as the reflection of the peritoneum will allow. Camphorated spirits of wine should then be thrown in, by a pipe inserted into the opening in the duodenum, so as to distend moderately the small and the great intestines, the stomach, and the œsophagus. The pipe should now be withdrawn, and the opening in the duodenum closed by a strong ligature. A small opening should next be made in the trachea, almost immediately under the cricoid cartilage of the larynx; an injecting pipe should be put into it, and the air-cells of the lungs should

be moderately filled with camphorated spirits of wine. The pipe should then be withdrawn.

A ligature should next be made round the aorta, close to its origin, and the cavities of the heart should be laid open, for the reception of an antiseptic powder, the composition of which shall afterwards be described.

The urinary bladder should then be squeezed, so as to be completely emptied, and should be laid open at its fundus. When this has been done, the surface of all the viscera of the thorax and abdomen, together with their parietes, should be washed with camphorated spirits of wine. Then all the interstices of the different viscera of the thorax and abdomen should be filled with an antiseptic powder, consisting of camphor, white resin, and nitre, intimately mixed together. With this powder too the cavities of the heart and of the urinary bladder should be filled.* The proportion of these different ingredients to each other is

* In two of the children, I opened the head at the anterior fontanel, took out a portion of the brain, and filled the cavity with the antiseptic powder. In the third child I made no opening into the head, yet the head is perfectly preserved from decay. This operation is therefore unnecessary.

not of much importance, as in the three children which I embalmed, it was different in each. Two parts of camphor, one of resin, and one of nitre, will probably be as good a proportion as any other. Some essential oil of rosemary, or lavender, or both, may then be sprinkled upon the surface of the powder. The oil will give an agreeable odour, but is not necessary for the preservation of the body. The body should then be very closely sewn up.

The mouth, the nostrils, the passages of the external ears, the rectum, and the vagina (if a female is embalmed) should be filled with the antiseptic powder already described. The humours of the eyes should next be let out, and the space between the eyes and the eyelids should be filled with the antiseptic powder; after which the two eyelids should be brought into close contact with each other. The body should then be rubbed over with some aromatic oil, such as oil of rosemary or lavender. All the limbs and other parts are then to be put into the posture, in which they are to remain, upon a bed of Paris plaster, or any other absorbing substance.

In this way the embalming is completed by a series of processes much more simple, more

convenient, and less tedious, than in the method adopted by William Hunter. All the trouble of cutting out the various viscera, and injecting their vessels a second time, is avoided, while the body is effectually preserved from decay.



DISSECTIONS.

REGENERATION OF THE RETE MUCOSUM.

IT has often been said that the Rete Mucosum in a Negro is not regenerated: this however is a mistake. In a Negro who was brought to the dissecting room, I found many old scars where the Rete Mucosum was regenerated. On the outside of the right thigh, in a scar two inches in length, and near an inch broad, the regeneration was especially remarkable, the scar being as black as the original sound skin. There was new skin also formed about a very small sore in one of his legs, where the Rete Mucosum was regenerated. However, it does not appear to be always regenerated. There is a preparation in William Hunter's collection, in which there is a scar completely white.

December, 1784.

CASE OF LOCKED JAW.

A BOY aged seven years was brought into St. George's Hospital, having a very bad compound fracture of the left leg, in consequence of the wheel of a stage coach having run over it. He remained for two or three days in the Hospital without any remarkable occurrence, but at length he was seized with a stiffness of his jaw, so that he could not open his mouth wider than merely to admit between the teeth the tip of his tongue. His head and neck became very strongly bent back, and there was also a very great incurvation of the trunk of the body backwards. The back felt very hard, like a plank of wood, as well as the muscles of the neck ; the masseter muscles were less hard to the feeling. His arms and legs did not seem affected by spasms. His skin was hot, his pulse towards the beginning of the disease, 108, towards the end, 140. At an early period of the disease there was considerable perspiration, of the head particularly. He got draughts with 15 drops of laudanum every two hours. At first

the boy swallowed those draughts pretty readily, but at length with extreme difficulty, and his body, at the time of swallowing, was thrown into violent agitations. After two draughts he could open his mouth wider, but his neck and trunk became more affected. He had a blister applied between his shoulders, and a glyster with valerian in it was administered. He died about the middle of the second day after those symptoms had appeared, but probably the jaw had been a little locked before it was observed by the nurses. It was remarkable, when the boy died, that no more force was necessary to make the muscles relax than commonly happens. When I examined the body, twenty hours after death, the muscles of the back and neck were quite relaxed. The left ventricle of the heart was firmer than I recollect to have felt it, and empty; the right ventricle was fuller of blood than common. The lungs appeared to be in their ordinary state. The stomach was contracted to little more than the size of a small intestine. The tract of the intestines was natural, except a portion of their length, which was sprinkled with blood-vessels like an injected preparation. The bladder was extremely contracted. The sinuses of the dura mater were much fuller of blood than common, and the

blood was more fluid. The ventricles were filled with more water than usual. The blood seemed more accumulated in the superficial veins than natural, especially in the arms, they appeared just as if injected by a blue fluid. The blood was upon the whole less coagulated than is common. A sharp portion of the broken bone was found irritating the flesh.

DESTRUCTION OF A PORTION OF THE MUCOUS
COAT OF THE STOMACH.

AT the request of Dr. Garthshore, I opened the body of a boy about ten years of age.

In the abdomen there was little diseased appearance. The stomach on its internal surface was a little inflamed, and there were small spots of extravasation in different parts. In two places I observed a want of the mucous coat, but it did not seem to have arisen from ulceration, nor could it be the effect of the gastric juice. It seemed as if it had been the effect of mechanical violence on those two parts ; and yet no violence was used at least in the examination of the stomach.

In one of the absorbent glands of the mesentery, which were most of them somewhat enlarged, there was some earthy matter.

The liver was rather enlarged and the colour somewhat uncommon.

The spleen was the size of an adult spleen, and at one part there was a singular colour of spleen, viz. similar to what is every now and

then found in the liver when the bile is deposited in the simple glands.

The chief disease was in the thorax, nearly a pint of water was found in the cavity of the chest, but more considerably in the right side than the left. The lungs themselves were perfectly sound. The heart was considerably enlarged and upon the outside every other circumstance seemed perfectly natural, except that there was a harder feel and a whiter colour in the direction of the septum ventriculorum near the base of the heart. When the aorta was cut open its valves were found more completely ossified, than I had ever seen in any heart before, but the coats of the artery itself immediately at the heart were perfectly sound. The valves of the pulmonary artery were in a perfectly natural state as well as the tricuspid and mitral valves.

CASE OF ULCERATION OF THE STOMACH.

Mrs. S. aged about 50, had been some years afflicted with a violent occasional pain in the scorbiculus cordis, and with vomiting, which was most apt to happen after meals. These symptoms had lately been more violent and frequent for some time before her death. She also passed mucus along with her stools. On opening the body I found an ulcer near the small curvature of the stomach, on its posterior side, and about two inches from the cardia. This ulcer was oval in shape, its long diameter being more than an inch, and the short one more than half an inch. The edges of the ulcer were not very thick. A part was entirely destroyed so as to make the cavity of the stomach to communicate with the cavity of the abdomen. The great end of the stomach was considerably inflamed, and was filled with urine mixed with very green bile. The small intestines were slightly inflamed. The uterus was the smallest I ever felt in an adult. The ovarium, on the left side, was exceedingly shrunk, and that on

the right side was converted into hydatids; the fallopian tube being gradually enlarged as it went towards the hydatids where its extremity was obliterated.

How long could it be since there was an opening between the stomach and the abdomen? The communication would have easily admitted the end of an adult forefinger, and the lips were not much ragged surrounding it, so that it appeared to be of some standing. Food was not found in the abdomen, because it was taken in very small quantity, and naturally fell to the great end of the stomach, which is the most depending part. The ulcer might have remained for some little time, because it was a good deal out of the way of being much irritated by the food, and there was the general surface of the stomach for digestion.

MUCUS OF THE STOMACH.

I HAVE seen a stomach whose inside was everywhere covered with a yellowish very toughropy mucus. There was no diseased structure whatever in the stomach. May not this mucus be considered as a morbid secretion of the stomach? The woman could keep nothing on her stomach for any length of time, and often vomited such matter.

MALFORMATION OF THE LIVER.

IN an old female subject, I met with an unusual conformation of the liver. At the extremity of the great lobe, where it joins the diaphragm, and upon its anterior surface, there were three considerable excrescences. They were of the same substance and had the natural feeling of a healthy liver. There was a very large nitch in the edge of the right lobe where the gall-bladder projects; and an unusual shape of the left lobe, it being much longer than common. There was a concave edge of the left lobe next the spleen. The gall-bladder was uncommonly large and had a small stone in it.

RUPTURE OF THE LIVER.

I examined the body of a young man who died unexpectedly from a bruise. He had been run over by a carriage, and the wheel passed over his body at the region of the liver. When he was brought to the Hospital the common remedies were tried, and he appeared to be getting better, and it was not suspected that any considerable mischief had been done; indeed he was considered almost well, and was walking up and down the ward, when he suddenly became worse, and soon died. This event happened four or five days after his admission into the Hospital. On opening the body a rupture of the liver was seen in the large lobe running obliquely about four inches in length. The man had complained of little pain in that region, but it is probable his pulse was low and depressed.

TUBERCLES OF THE LIVER.

IN a person who died dropsical, I very carefully examined a schirrous liver. It was studded with very small tubercles, and was of a very yellow colour. I particularly examined the branches of the vena portarum. As far as they could be traced by the knife, there was no tendency to obliteration in them and they were not fuller of blood than usual ; an appearance which entirely overturns the opinion, that dropsy is occasioned by a schirrous liver producing obstruction in the vena portarum. I examined the water by application of acids and heat. It contained very little coagulated substance. The water in ascites seems to differ very considerably in this circumstance.

December, 1787.

SCROPHULOUS ABSCESSSES IN THE LIVER.

I HAVE seen a liver with a great many scrophulous abscesses in it. One of these abscesses was very large, all of them were lined with a white and pretty firm membrane. They contained a white thick pus mixed with bile. The liver, round the abscesses was not at all inflamed, neither was the liver inflamed on its surface.

December, 1793.

VESICULÆ SEMINALES CONVERTED INTO A
FATTY SUBSTANCE.

IN a subject brought into the dissecting room, who was said to have had dysenteric symptoms for about six weeks, I found the coats of the rectum much thickened, and its internal surface spread over with innumerable ulcerations. There was a blackish-brown mucous matter contained in the gut, which gave its inside some appearance of mortification, but when the matter was washed off, the texture of the gut was firm, and had not undergone putrefaction. The bladder was much thickened from an obstruction in the urinary passage, but what I particularly observed, as being uncommon, was the left vesicula seminalis almost entirely obliterated, or rather converted into a fatty substance.

December, 1787.

DIVISION OF THE URINARY BLADDER INTO TWO CHAMBERS.

THE urinary bladder is sometimes divided into two chambers by a membranous septum, and there is generally a communication between them. Dr. Ash, however, sent me a case where there was no opening in the septum between the chambers, but there was some appearance of a cicatrix as if there had formerly been one. Both of those appearances are very rare, especially the last. It is easy to see, under such circumstances that a catheter may empty the one chamber and not the other, or the one being emptied there may still remain the feeling of suppression. It is very difficult to conjecture how such a septum is formed.

FUNGUS OF THE BLADDER.

IN a man who had been an out-patient of St. George's Hospital, who had passed bloody urine, but without any particular complaint of pain in the region of the bladder, there was found, on examination after death, a spongy soft substance some inches in diameter, arising from the posterior surface of the bladder, near the ureters.

April, 1787.

URINARY FISTULA.

I was present at the opening of a boy, who died at St. George's Hospital, by Mr. Hunter.

The boy was about four years of age, and had been long afflicted with a disease of the urethra, so that the urine did not pass in the usual way, but was discharged by an orifice in the scrotum. On examination there was found a pretty large opening in the urethra, which communicated with a particular bag in the scrotum. The urine was discharged into this bag, and at last past out by a fistulous orifice in the scrotum, which communicated with the bag. The muscular coat of the bladder was somewhat thickened. In the left kidney there was a small abscess and two small stones. Perhaps the pressure of one of the stones had occasioned the abscess, in which it was lodged. The other kidney was tolerably sound, only in one part of its substance there was a white curdy kind of matter intermixed with little granules of calcareous earth.

January, 1785.

SCROFULOUS TUMOURS STUDDED OVER THE
PERITONEUM AND MESENTERY.

By desire of Dr. Burges, I opened a boy, who died after a long tract of bad health. He had often had complaints of his bowels, sometimes constive, sometimes the contrary, with some symptoms of diseased lungs. Sometimes he was pretty well, at other times ill. He had always been a weakly child, and at length after severe bowel complaints he died. On opening the abdomen, a layer of firm scrophulous matter was under the parietes. The mesentery and the whole surface of the intestines, under the peritoneal coat, were studded with small rounded tumours of cheesy scrophulous matter. I never saw such matter before distributed in the same manner, nor exactly in the same parts. It was remarkable that the absorbent glands were but very little affected. There were tubercles in the lungs. The boy was descended from scrophulous parents, and all the other children of the family were scrophulous.

UNIVERSAL ADHESION OF THE ABDOMINAL
VISCERA.

IN a Negro, who was brought into the dissecting room, I found the most universal adhesion of the viscera of the abdomen I had ever seen, every part being glued together. When I cut through the intestines, there was an infinite number of irregular cells from the cut intestines adhering together between the muscles, and on the outside of the peritoneum there was a prodigious number of small white masses, which would be called scrophulous. The fæces in the great intestines were whitish, and very much resembled mortar for building, but there were no gall-stones obstructing the biliary ducts, nor in the gall-bladder. The lungs were tolerably sound, but there was universal adhesion between the heart and the pericardium.

March, 1786.

STATE OF THE INTESTINES FROM FATAL PURGING.

It does not always happen, when a person has died from purging, that there are ulcers in the intestines. In two cases, which I have opened, of persons who died from this complaint, the small intestines were inflamed, so as to preserve the appearance of distinct vessels, the small branches of arteries curling most beautifully on the outer surface of the intestine filled with florid blood, and the villous coat being slightly red. The great intestine was contracted, especially towards the rectum, and filled only with mucus, there being at the same time no inflammation in it. In one of the cases the uterus was very hard, and enlarged to the size of an orange, and was clearly schirrous, yet the woman, all the while she was in the Hospital, (which was some weeks) never complained of any pain.

CONTENTS OF THE INTESTINAL CANAL AT BIRTH.

IN the small intestines of children, at birth, there is a soft substance between the consistence of a solid and a fluid and of a deep green colour. In the great intestines there is a substance of the same consistence of a brownish yellow colour. The first is absorbed for nourishment, and the other is excrementitious, and called meconium. The great intestines are commonly so very full of this meconium, that this fluid is thrown out by the anus by a fine injection, all the viscera being enlarged from the turgescence of their vessels, so as to press on the cavity of the great intestines and to propel the meconium. It is necessary that the contents of the intestines should be known, else they may be taken for disease.

ULCERS OF THE MUCOUS MEMBRANE OF THE
GALL BLADDER.

IN a man who died in St. George's Hospital, I found the inner coat of the gall-bladder studded with a number of circular ulcers, some of which were rather larger than a sixpence. There was no thickening whatever round the ulcers, but they appeared as if they had been cut out with a knife. The other coats of the gall-bladder were sound.

September, 1793.

INFLAMMATION OF THE LARYNX.

A WOMAN, about 25 years of age, was brought into St. George's Hospital about the 6th of March. She was speechless, her countenance was extremely deranged, her pulse was 120, and she had some heat of skin. The person attending her said the patient had been ill some days, that she had immense pain about the throat, and that she could not swallow any thing; next morning she died. On examination I found the aperture into the larynx very considerably inflamed, so that the parts had twice their usual thickness. The inflammation had crept a little way within the cavity of the larynx, and the pharynx was also somewhat inflamed. In one part four or five drops of pus were formed. This state of the larynx had given the most excruciating pain in swallowing, so that nothing could pass through the gullet. On opening the cavity of the abdomen, a slight degree of peritonæal inflammation, with coagulable lymph thrown out upon the surface, was remarked. A blister had been applied to the external fauces, but nothing seemed to have been done with respect to the peritonæal inflammation.

March, 1789.

ENLARGEMENT OF THE VENA CAVA.

J. T., aged about 24, had been an in-patient of St. George's Hospital nearly three months. He had ascites with anasarca of his legs, a kind of pulsation on his right side in the region of the liver, and laborious respiration. Oxymel scilliticum, sal diureticus, antimonials, &c. were tried, and at one time he got better. Soon, however, he became worse, and the swelling of the belly and the legs was attended with a slight jaundice. In this state he died, and I opened his body. The water in the abdomen was tinged yellow, the liver was hard, and had a large quantity of bile stagnated in it, but I found no stones in the gall-bladder or its ducts. The pancreas was schirrous. There was an uncommonly large vena cava inferior, and small aorta, but no disease in them. There was an universal adhesion between the pericardium and heart, and an adhesion of the lungs to the chest.

What could be the cause of this enlargement of the vena cava? Could it be the blood not passing easily through the lungs, which were diseased, and from the heart not being allowed

free motion, so that the blood was accumulated on the right side of the heart and vena cava? Could the pulsation be in the vena cava, for it was felt in the region of the right lobe of the liver, where the vein passes? This pulsation must, in order to have been felt, have been greater than in the aorta, which is not very probable. The vena cava superior was somewhat enlarged, but not so much as the inferior. A strong pulsation could be felt in the course of the vessels of the neck.

OBLITERATION OF THE RIGHT CAROTID ARTERY.

I FOUND, in a man in the dissecting room, the right carotid artery, just before its division into external and internal, so enlarged as to double its natural size, and filled with a firm coagulum, which adhered to its inner coat, so that it would not separate in some places, and the inner coat was torn away along with the coagulum. On the left side, in the carotid artery, before the division into external and internal carotid, there was an aneurismal dilatation about the bulk of a pigeon's egg, with a coagulum of blood filling up a part of it. The whole of the arterial system was enlarged, and on the inside of the arteries were seen opake white spots, the inner coat was thicker, and easily separable, and the muscular coat more distinct than in a sound artery ; all of which appearances take place in arteries beginning to become aneurismal, or to ossify. This shows that an animal may live without circulation through one carotid artery, so that it may be tied or obliterated, without life being certainly endangered. It also shows how an aneurism may cure itself, for if an aneurismal

dilatation be entirely plugged up, so that there is no circulation through it, there is no cause existing to increase the dilatation, and therefore it will remain stationary, or be diminished by absorption. In the inguinal artery I once saw a line of obliteration which always existed there, or was the consequence of some peculiar process. There was no compression upon it, and therefore it could not arise from such a circumstance taking place in an artery where there was aneurism; if nearer the heart than the aneurism it would become a natural case.

ANEURISM OF THE AORTA.

I WAS desired by Mr. Pearson to assist in opening the body of a patient who he at one time suspected was afflicted with aneurism. There was a considerable deep-seated pulsation in the breast, with the common symptoms of Dyspnœa, viz. a shortness of breath, with a little dry cough. His pulse was frequent, about 110, but regular and soft. He dated the origin of his complaint to a severe blow with the fist about three years ago. It was about a twelvemonth after this accident before he became a patient of Mr. Pearson, at the Carey Street Dispensary, when he found the above symptoms. He continued a patient till about two months before death, when he became tired of medicine. Mr. Pearson at last thought that the disease could not be an aneurism, from its remaining so long without destroying the patient, or swelling externally into a tumor or bag. On laying bare the ribs there was an evident fullness on the right side of the chest; on removing the sternum with the ribs we met with the following appearances.

1st. An abscess between the ribs and the right lung, near the diaphragm, the ribs being somewhat eroded. 2d. The right lung was condensed and hard, adhering very firmly every where to the ribs. 3d. There was an aneurism of the arch of the aorta as large as a man's fist, containing coagulated blood, and having eroded three or four ribs, where there was the bulging externally. There were near four ounces of fluid in the pericardium. This shows first, the slow progress of aneurism in some cases, and likewise, that aneurism in such a place is not necessarily attended with irregularity of pulse.

SCROFULOUS TUBERCLES OF THE LUNGS.

I WAS present at the examination of the body of Mr. B., a young gentleman who died at the age of 21, of pulmonary consumption. The examination was made by Mr. J. Hunter. The right lung adhered to the ribs every where, except at the lower part, where there was a quantity of pus, amounting to half a pint, between the outer surface of the lungs, ribs, and diaphragm. The lung itself was universally diseased. In this pus were floating lumps of coagulable lymph, one of them as large as an egg; a circumstance which I never met with before. The left lung no where adhered, but its surface was regularly studded with small white tubercles of scrophulous matter, almost resembling a variolate stone. The inside of this lung when cut into was also studded with the same tubercles, and at regular distances. I never saw any appearance of tubercles so distinct and so regular. On the inside of the pericardium there were two small scrophulous tumours, each about the bulk of a hazel nut; a very uncommon occurrence. The abdominal viscera were sound.

EFFUSION OF AIR INTO THE CELLULAR MEMBRANE
OF THE LUNGS.

I ATTENDED a Baker in a violent fit of asthma, a complaint to which he had been subject for more than twenty years, and which he inherited from his mother. It was at first relieved by opium, but soon afterwards it recurred, although not with the same violence, and continued without intermission till death. When I opened his chest the lungs did not collapse on either side, and were in a state of much more than half distension. They scarcely receded from the ribs. On looking closely to them, air was found to have got into the cellular membrane surrounding the cells of the lungs. The trachea seemed somewhat narrowed, there being less distance between the extremities of the cartilaginous rings than usual. The trachea was filled with mucus involving air forming bubbles.

December, 1785.

CASE OF PERITONEAL INFLAMMATION AFTER DELIVERY, PRODUCED BY THE ESCAPE OF THE URINE INTO THE CAVITY OF THE ABDOMEN, IN CONSEQUENCE OF ULCERATION OF THE URINARY BLADDER.

I WAS called, by Dr. Douglas, to open the body of a woman who died an hour after being delivered by the vectis, in whom symptoms of peritoneal inflammation had appeared two days before death. When I opened the body there was a great quantity of fluid with coagulable lymph swimming in it, and the peritoneum was universally inflamed. There were adhesions between the liver and the diaphragm, between the transverse arch of the colon and the stomach. Some of the small intestines and parietes of the belly, between the uterus and the bladder. The bladder was quite empty, some of the adhesions were in the form of coagulable lymph, others in the form of cellular membrane, although the inflammation was not of more than above two days standing. There was an ulcer in the back of the bladder, a quarter of an inch in diameter, by which the urine escaped into the cavity of

the belly, and produced peritoneal inflammation. The cause of the ulcer I dont know; it could scarcely be from pressure, for every uterus under similar circumstances is equally exposed to pressure. In cases where peritoneal inflammation comes on before delivery, it will perhaps be found owing to some similar cause, as an ulcer in the intestine, by which its contents escaping into the general cavity, ulcer of the liver with bile or gall-stones escaping, &c. I have seen peritoneal inflammation produced by an ulcer in the gall-bladder, and inspissated bile having escaped into the cavity of the abdomen.

INTERITIS MISTAKEN FOR COLIC.

A MAN was admitted into St. George's Hospital affected with a disease which the physician thought to be colic. He was crying out with pain, his body was bent forwards, his pulse was small and very frequent, he was costive and had vomited; he had been taken ill about three days before he applied to the Hospital for relief, and he died the day after. On opening the body I observed universal inflammation of the peritonæum, both where it lined the muscles and covered the intestines. Some parts of the intestines were more inflamed than others. Where the inflammation was greatest there was a covering of coagulable lymph, which peeled off as a membrane; some parts of it had scarcely the consistence of membrane. There was, besides, about a pint of fluid in the cavity of the abdomen, which had the properties of serum. The intestine at the most inflamed parts, had no appearance of inflammation in the villous membrane, so that it was confined entirely to the peritonæum. This case shows that men

may be attacked with peritoneal inflammation as well as women, although, from certain circumstances, they are not so liable to it. It also proves how soon this disease is fatal, if not counteracted. It shows that great attention should be paid to distinguish between similar diseases; for this had been mistaken for colic.

TUMOR OF THE THORACIC DUCT.

IN a subject in the dissecting room, I found the thoracic duct entirely interrupted by a firm yellowish-white substance (which I supposed to be a portion of firm chyle), so as to prevent air to pass beyond it. The matter was the thickness of scrophulous matter in absorbent glands. There was no alteration of the duct at that place, and it was entirely empty every where else.

EXTRA-UTERINE CONCEPTION.

I HAD an opportunity of examining a woman, after death, in whom a foetus had increased to seven months in the ovarium of the left side.

The child had been contained in a bag nearly a quarter of an inch in thickness. This bag adhered partly to the posterior surface of the uterus near its fundus, partly to the meso-colon near the edge of the intestine, and partly to one edge of the placenta. The inside of this bag was smooth, and on the outside it was covered with peritonæum. It could not be separated into layers, resembling amnios, chorion, &c. and it was, in fact, the left ovarium, much distended by growth. The placenta was situated on the right side, lying in a great measure within the cavity of the pelvis, partly adhering on the inside of the large vessels of the pelvis, and partly adhering to the meso-colon. It in every respect resembled a common placenta, in structure, thickness, &c. The side next the child was covered with amnion and chorion. On the opposite side it was covered with a smoother and more transparent membrane than the common decidua. On separating the placenta from

the meso-colon, the side of the pelvis, &c. no veins were traced entering into its substance. As the child was really in the cavity of the ovarium, it was not likely that the placenta should be supplied from the vessels of the intestines. The spermatic artery of the left side seemed increased to twice its ordinary size, but it was not distended fully by injection, and might have been larger. The spermatic vein was about three times its ordinary size, and was clearly traced to the distended bag. One very large vein was traced along the side of the bag next the uterus, to the spongy part of the placenta. Neither artery nor vein appeared enlarged in proportion to the growth of the parts to which they were going. The spermatic artery seemed to be assisted by one passing off from the internal iliac, which ran along the side of the distended bag. The child was very putrid, and the cuticle was almost separated from the body. The navel string joined the placenta not far from its lower edge, and some of the branches of the vein passed from the inner to the posterior surface, when they entered into its substance. The uterus itself was increased in size as much as it is about the third month of pregnancy. At the middle of its anterior surface there grew a flattened rounded tumor, which consisted of a bag con-

taining a whitish pulpy substance, somewhat resembling scrophulous matter, although not like it exactly. At its very fundus there was a much smaller tumor of the same sort. In cutting into the cavity of the uterus, its parietes appeared to have taken on a growth exactly similar to that in impregnation. The inner surface of the cavity was much more vascular than that of an unimpregnated uterus, and some loose portions of membrane were found floating like common decidua. The round ligaments seemed thicker and larger than in proportion to the increased size of the uterus, and had therefore very fully taken on a change similar to that in impregnation. The fallopian tubes were also enlarged and filled with a good deal of yellowish-white mucus. The fallopian tube of the left side passed round a portion of the bag, but its fimbriated extremity was obliterated. There was no trace of ovarium upon the left side, it having been changed into an immense bag. On the right side there was a pulpy fullness in contact with the fallopian tube, but there was no natural structure of ovarium.

DISSECTION OF AN IMPREGNATED UTERUS.

I WAS called to a woman who had died suddenly undelivered. She had not been dead more than half an hour before I came, and it was proposed that the uterus should be opened to recover the child, if possible. An incision was made through the length of the uterus before, and the child with the placenta was removed. The child's head had passed a considerable way into the cavity of the pelvis. Some means were used to restore animation in the child, but they were unsuccessful. On the left side of the uterus there was a rupture near the round ligament, half way between the fundus and the os uteri, with a quantity of coagulated blood. This blood was lodged between the rupture and the peritonæum. The abdomen was very pendulous. The uterus contracted to one half of its natural size after it was taken out of the body: a proof of its muscularity. On its surface, near the round ligaments, were seen small absorbent vessels directed towards the fallopian tubes.

DISSECTION OF AN IMPREGNATED UTERUS.

I WAS present at the opening of a woman who had died suddenly undelivered. Her belly was exceedingly projecting and pendulous, being in her 13th pregnancy. On the left side, near the round ligament, and half way between the fundus and the cervix uteri, there was a rupture two inches in length, and a great quantity of coagulated blood between the uterus and peritoneum. This rupture was not in the way of pressure, and therefore could only arise from the efforts of the uterus contracting on the child being carried beyond the strength of the uterus. Perhaps it may be found that ruptures are most frequent where there are pendulous bellies, and where the abdominal muscles can less assist the contractions of the uterus, and therefore where it is called upon to exert greater force. It probably does not rupture immediately at the fundus, because this does not embrace fully the child lying rather above it, nor at the os tinæ, because when the child's head has got so far, the labour may be said to be past, so that the greatest exertion of the uterus will be at the middle, between the fundus and the os tinæ, where the rupture is most common.

MUSCULAR STRUCTURE OF THE UTERUS.

A TREATISE has lately been published by professor Walker, of Berlin, denying the muscularity of the uterus, and ascribing its contraction after child bearing to the contraction of arteries. I happened to see lately a uterus taken from a woman who died during delivery, when the placenta was still remaining, and the uterus had not contracted itself. I could observe distinctly on the outer surface, upon the edges of the uterus at the ligaments, longitudinal fibres running from the fundus to the cervix uteri. I also observed transverse or circular fibres surrounding the uterus at the line of separation, between the fundus and the cervix uteri. Both appearances were as distinct as in any muscle whatever, only the fibres were not of a very red colour. Circular fibres can be distinctly seen on the outside surrounding the origin of the fallopian tubes. Besides, how could the contraction of arteries either give much assistance to the expulsion of a child, or contract so large a body as the uterus itself in so short a time after delivery.

January, 1789.

OVARIUM CONTAINING FAT AND HAIR.

A GIRL about 13 years old was brought into the dissecting room, and the blood-vessels were injected. The right ovarium was swelled to a size larger than a hen's egg. It was filled with a peculiar sort of fat and hair: at one place there were two long excrescences from the capsule containing this fat, which a good deal resembled teeth. The uterus was as small as at birth, and, when opened, exhibited the common appearances. The girl had an entire hymen, and the pubis was without hair. Such cases have been considered as impregnations, but in this case, the state of the uterus, the age, and the hymen, rendered such a supposition groundless.

January, 1789.

SINGULAR DISEASE OF THE MUSCLES.

IN a subject brought into the dissecting room many of the muscles were extremely altered from their natural appearance. They were converted in many places into a yellowish substance, where the appearance of fibres was preserved. Some muscles were entirely converted into such a substance, others partially, and others not at all. The pectoralis major of the right side was particularly affected. This change in the muscular fibres was confined to the right side. The subject was a man about 60 years of age.

OSSIFICATION OF THE INTERNAL INTERCOSTAL MUSCLE.

I FOUND, in the intercostal space between the first and second rib, and about two inches from the sternum, an ossification extending in the direction of the fibres of the internal intercostals. There was a kind of joint formed in this ossification, just at the lower edge of the first rib, made by the motion of the second rib in respiration.

SINGULAR DISEASE OF A NERVE.

IN a body in the dissecting room I found a very considerable nerve, which I traced to the renal plexus, and which was a distinct hollow tube. One of the pupils asked me what artery it was. I looked at the cut extremity, which was exactly like the extremity of a cut artery, but it looked extremely like a nerve, and its coats were not at all elastic. This made me trace it particularly to its termination as above mentioned. Such an appearance is extremely rare.

November, 1789.

BONE FORMED IN DIFFERENT ORGANS.

A PATIENT was admitted into St. George's Hospital, with a hard swelling of his knee, for which the leg was amputated. The stump was going on well for some time, and his general health seemed very good, when he was suddenly seized with difficulty of respiration, and at length he died. On opening the body great irregular knobs of bone were found in the substance of the lungs, and on the back part a knob of bone fixed to the ribs, and projecting forwards, being part of the lungs ossified, where probably they had been adhering to the ribs. Bony matter was found to be secreted on the surface of the sore, when the knee of the amputated leg was examined; the tumor, which was as large as the head of an adult, was found to be a bony tumor, and it had only been about 20 weeks in growing to that enormous size. There had been a very strong disposition in the constitution to form bone. The system had indulged this disposition in the knee; when it was disappointed in this by amputation, it transferred the process to the lungs, a vital part, by which the man lost his life.

DISEASED APPEARANCES IN TYPHUS FEVER.

A MAN was brought into St. George's Hospital at the termination of what is called a putrid fever. His eyes were glazed, his skin cold, his pulse could scarcely be felt, his teeth and tongue were covered with a black crust, his countenance was exceedingly deranged, and he had lost the power of speech. He died in 36 hours. About 12 hours after death he was examined. His brain was much softer than is common at the same length of time after death; the sinuses of the dura mater were full of blood; and a little jelly was in some places thrown out under the pia mater. In the ventricles was more than three ounces of water. On opening into the chest the pleura on the left side was furred over with a thick crust of coagulable lymph, of a lace work texture, and had blood-vessels running in it. About two pints of serum was in the cavity on that side. The man, according to the accounts of his friends, had been ill for some weeks before he was carried to the Hospital. His disease probably began with inflammation of his side, and ended with the ordinary symptoms of a low fever.

FUNGUS HÆMATODES OF THE ARM.

A MAN, aged about 30, came into St. George's Hospital with a swelling in his right arm, having the skin of a pale colour. It gradually increased, and a slight opening was made into it; a very bad discharge followed, and the patient gradually wasted till at length he died. I examined the arm and found a matter formed under the skin between the muscles, and occupying the place of some muscles, exactly resembling soft brain. The bone was a little affected; in a few places the surface of the *os brachii* was somewhat rough.

MALFORMATION OF THE EXTERNAL EAR.

I HAD an opportunity of seeing in a child about five months old, a capsule removed at a considerable distance from the *membrana tympani*, forming in this way a considerable cavity between them. There was a small pipe of communication between this cavity and the external ear. The *membrana tympani* was not hollow, nor tense.

END OF THE FIRST VOLUME.

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